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ABSTRACT

This final report describes activities and accomplishments of a 3-year project at California State University Chico (CSUC) to reengineer the 2-semester elementary accounting course. The new model emphasized, first, shifting from the traditional view of the preparer of accounting information to that of the user; second, forcing the student to adopt an active learning mode; and, third, developing problem-solving, interpersonal, and computer skills. During the 3-year period of the grant, approximately 2,700 students were exposed to the new curriculum at CSUC. Assessment data indicate that significant shifts in student attitudes occurred in the desired directions. Dissemination initiatives have resulted in seven schools committing to adapting the new curriculum to their institutional settings. Following an executive summary and a project overview, individual sections of the report describe the project's purpose, its background and origins, key elements and major features of the reengineered curriculum, project results, and a summary. Extensive appendices include sample serial cases, pre- and post-test attitude surveys, sample final exams, results of student exit interviews and questionnaires, and two papers about the project: "Re-engineering Elementary Accounting Education A Statement of Course Objectives and Subobjectives" (Curtis L. DeBerg and Richard B. Lea), and "Bridging Principles and Intermediate Accounting Using Electronic Spreadsheets" (Curtis L. DeBerg). (DB)

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ED 420 274

Final Report

Reengineering Elementary Accounting

November 30, 1995

Grantee Organization:

California State University, Chico
Department of Accounting and MIS
Chico, California 95929

Grant Number (Application #):

P116A20837
ATTN: No. P116B-4

Project Dates:

Starting Date: September 1, 1992
Ending Date: August 31, 1995
Number of Months: 36

Project CoDirectors:

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FIPSE Program Officer:

David Johnson

Grant Award:

Year 1 (1992-93)	**$82,057**
Year 2 (1993-94)	**72,674**
Year 3 (1994-95)	**44,937**
	$199,668

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Project Summary

This project involves a comprehensive reengineering of elementary accounting which: i) shifts from the traditional view of the *preparer* of accounting information to that of the *user*; ii) forces the student to adopt an active learning mode; and iii) emphasizes development of problem-solving, interpersonal, and computer skills. These changes parallel recommendations of the Accounting Education Change Commission for the first courses in accounting. Assessment data indicate that significant shifts in student attitudes have occurred in desired directions. Dissemination initiatives have resulted in seven schools committing to adapting the new curriculum to their institutional settings during the next two years (1995-97).

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Project Title: Reengineering Elementary Accounting

I - Executive Summary

Project Title: Reengineering Elementary Accounting

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Introduction

This Executive Summary briefly describes the major findings that are detailed in each of the remaining sections of the report.

II - Project Overview

This project involves a comprehensive reengineering of elementary accounting. The overarching goal driving the redesign effort was the following:

> ***To provide students with an understanding of the uses and limitations of accounting information in economic decision-making in a variety of business and organizational contexts.***

Five specific goals provided the framework for defining projects and carrying out tasks during the three-year grant period. The five goals are as follows:

1. Identify a set of overall objectives and subobjectives for the elementary accounting course (two-semester sequence)
2. Design outcome assessment instruments to determine if objectives and subobjectives are being met
3. Develop instructional materials to meet the objectives and subobjectives
4. Revise our means of delivering the new materials
5. Disseminate the results to other community colleges and universities

As shown in Section II of the report, the project successfully achieved all five goals.

III - Purpose

The above goals were originally proposed as a way of attacking the following problem:

> ***The traditional view of elementary accounting - as the first course for accounting majors - focuses on preparation of accounting information. Yet, most students who enroll in elementary accounting will not become accounting majors. Hence, how should the elementary accounting course (two-semester***

sequence) be reengineered to satisfy the needs of its primary audience - adults who will be future users of accounting information in a variety of decision-making contexts?

As the project team carried out various tasks designed to satisfy the above goals, it encountered the following significant problems that required special attention:

- Inadequate attention to marketing (communication)
- Inadequate attention to faculty development
- Lack of understanding of students' beliefs regarding "active learning"
- Students' lack of computer skills
- Transitional problems for accounting majors moving to intermediate accounting
- Difficulties in assessing outcomes
- Difficulties in achieving continuous improvement of instructional materials
- Difficulties in managing the grading load.

The project team adopted a variety of solution approaches for dealing with these problems, which are described in Section III of the report.

IV - Background and Origins

Significant characteristics of the university, college of business, and elementary accounting courses that provided the setting for the reengineering effort are the following:

- **University** - residential campus of approximately 14,000 students.
- **College of business** - approximately 1900 undergraduate and 60 graduate (masters degree) students pursuing majors in the traditional areas of accounting, finance, etc.
- **Elementary accounting**:
    - Approximately 700 students per semester - roughly equally divided between AC -15 and AC 16 - in class sizes of approximately 35 students
    - Only 10 percent of the students enrolled in elementary accounting generally plan to become accounting majors.

The curriculum in place prior to the reengineering effort was traditional in both content (emphasis on preparation of accounting information) and delivery approach (emphasis on the lecture format).

V - Project Description

The project team's reengineering strategy involved the following key elements:

- **Start from scratch** - The new curriculum was designed starting with a blank piece of paper.
- **Innovate** - The team purposely set out to be innovative and to take risks.

- **Articulate objectives** - It was agreed that the new curriculum would flow from an agreed upon set of course objectives and subobjectives.
- **Create individual modules** - Individual team members created specific modules.
- **Empower the team** - It was agreed that the curriculum was owned by the team, not by individual faculty members.
- **Commit** - Team members agreed to meet weekly to review progress and to make curricula decisions.

Major features of the new curriculum that flowed from this strategy are as follows:

- **User Orientation** - Accounting knowledge is addressed from the view of the user/decision-maker rather than from the perspective of the preparer of accounting information.
- **Problem-solving skills** - To enhance a student's problem solving skills, many of the individual and group assignments have a range of defensible solutions.
- **Interpersonal Skills** - Students are constantly placed in the active learning mode.
- **Computer Skills** - Students are required to prepare all homework solutions using a computer.
- **Serial Cases** - Many assignments involve a sequence of decisions related to a single company as it moves through time.
- **Simulation** - In order to acquaint students with the real production processes that underlie accounting information, a manufacturing simulation was created involving assembly line activities for the production of automobiles using LEGO^{R} blocks.

Each of these features is described further in Section V of the report.

VI - Project Results

Based on the findings of multiple assessment methods and multiple measures, the reengineered curriculum has resulted in the following major outcomes as reported by students:

- **Active learning** - Various aspects of the active learning mode are working, including daily advance preparation (individual homework assignments), frequent instructor questions, in-class group work, and oral presentations.
- **Group activity** - Collaborative learning activities are increasingly accepted by students.
- **Instructional materials and techniques** - New materials and techniques that are working include the use of mentors, integration of computers, use of unstructured problems, use of serial cases, adoption of analysis/essay exams, student course outline (SCO) and related overheads, and various individual and group assignments.

These same assessment methods also identified areas of the new curriculum that were not working and therefore required adjustments during the course of the three-year grant. Major adjustment areas are described in Section VI, as well as other details of assessment.

VII - Summary and Conclusions

Section VII of the report briefly discusses some overall conclusions regarding the three-year reengineering project that address the following areas:

- **Student learning** - The CSUC faculty involved in teaching elementary accounting and students taking the new curriculum increasingly have recognized the merits of the active learning mode.
- **Curriculum development** - The project team found the reengineering effort to be both extremely time consuming and intellectually challenging. Team members also became convinced of the need to view curriculum development as an ongoing activity involving continuous improvement that should involve extensive faculty collaboration.
- **Assessment** - Although traditional experimental design approaches to assessment were used during the project, the project team found that various face-to-face discussions with students provided the most insight as to what aspects of the new curriculum were working or not working.

VIII - Appendix

The appendix contains various supplemental materials as part of this report that are detailed in the separate table of contents provided at the beginning of the appendix.

II -Project Overview

This section provides an overview of major milestones and outcomes of the three-year grant project. The motivation for this project arose in the late 1980's and early 1990's when accounting educators and practitioners alike began to voice strong criticisms of accounting education as it was currently taking place in universities across the United States.[1] Of particular concern was the first-year, introductory accounting sequence of courses. Those courses were criticized as being excessively "preparer" oriented, with too much emphasis on bookkeeping skills involved in the accounting record-keeping cycle and with too little attention given to the uses and limitations of accounting information for decision-making purposes. Additionally, introductory accounting was faulted for relying too heavily on the traditional lecture teaching mode which allows students to remain relatively passive participants in the learning process.[2]

Stimulated by these expressed concerns of practitioners and educators, the accounting faculty at CSUC began to meet as a team during the summer of 1990 to discuss accounting curricula redesign options. Those meetings led to a series of grant proposals that eventually culminated in acceptance by FIPSE of the team's proposal to completely reengineer the college's two elementary undergraduate accounting courses.

The overarching goal driving the redesign effort has been the following:

> ***To provide students with an understanding of the uses and limitations of accounting information in economic decision-making in a variety of business and organizational contexts.***

The reengineering effort focused on drastically reducing the time and attention devoted to the *preparation* of accounting information and on significantly increasing student involvement in the *uses* of accounting information. Additionally, the teaching process was completely redesigned to encourage students to become active participants in the learning process. These changes parallel the recommendations of the Accounting Education Change commission for the first courses in accounting.[3]

Specific Goals Set Forth in the Grant

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[1] American Accounting Association, Committee on the Future Structure, Content, and Scope of Accounting Education, "Future Accounting Education: Preparing for the Expanded Profession," Issues in Accounting Education (Spring, 1986), pp.168-195; Arthur Andersen, Arthur Young, Coopers & Lybrand, Deloitte Haskins & Sells, Ernst & Whinney, Peat Marwick Main & Co., Price Waterhouse, and Touche Ross, Perspectives on Education: Capabilities for Success in the Accounting Profession (April, 1989); Accounting Education Change Commission, "Objectives of Education for Accountants: Position Statement Number One," Issues in Accounting Education, (Fall, 1990), pp. 307-312.

[2] Accounting Education Change Commission, "The First Course in Accounting: Position Statement Number Two," Issues in Accounting Education (Fall, 1992), pp.249-253.

[3] Accounting Education Change Commission, "The First Course in Accounting: Position Statement Number Two," Issues in Accounting Education (Fall, 1992), pp.249-253.

The above overall goal provided direction for the development of a set of five specific project goals that were enumerated in the grant proposal. These five goals, which have provided the framework for defining projects and carrying out tasks during the three-year grant period, are as follows:

1. Identify a set of overall objectives and subobjectives for the elementary accounting course (two-semester sequence)
2. Design outcome assessment instruments to determine if objectives and subobjectives are being met
3. Develop instructional materials to meet the objectives and subobjectives
4. Revise our means of delivering the new materials
5. Disseminate the results to other community colleges and universities.

Major Project Milestones and Outcomes

During the three year period of the grant, approximately 2700 students have been exposed to the new curriculum at CSUC. Table II.1 presents a capsule summary (arranged by the project goals #1 - #5 listed above) of major milestones and outcomes achieved during the three-year project. The table entries indicate that all five project goals have been achieved. Also, and highly significant from FIPSE's perspective, the project has culminated in a major dissemination initiative (funded by FIPSE) involving six other adapting institutions. In short, the new instructional materials developed by the CSUC faculty have passed a major test of "external" validity, involving a commitment by six adapting schools to intensively test the materials over the next two-year period.

Table II.1

Project Summary
Milestones/Outcomes
August 1, 1992 - August 31, 1995

Date	Description of Milestone/Outcome
Goal #1: Course objectives and subobjectives	
Oct. 1992	Project CoDirectors (Lea and DeBerg) complete a white paper entitled: "A Statement of Course Objectives and Subobjectives" (see the Appendix) for faculty review.
Jan. 1993	Accounting faculty formally approve the objectives outlined in the white paper.
Jan. 1993 - Aug. 1995	The two-semester course objectives are translated into more detailed module objectives, handout objectives, and group assignment objectives as the new instructional materials are developed and refined (see **Goal #3**, below).
Goal #2: Assessment instruments	
Aug. 1992	An initial assessment instrument involving an attitudes survey is completed and administered to all elementary accounting students (AC 15 and AC 16) at the beginning of the Fall Semester, 1992 (pretest). Pretests are continued for the remaining five semesters of the grant.
Dec. 1992	An initial assessment instrument involving accounting knowledge (multiple choice questions) is completed and administered to elementary accounting students (AC 15 and AC 16) at the end of the Fall Semester, 1992 as a posttest and thereafter each semester as a pretest and posttest. (The knowledge test is discontinued at the beginning of the Spring Semester, 1994 - see discussion of assessment in Section VI). The attitudes survey (in modified form) is administered at the end of the Fall Semester, 1992 (posttest). Posttests are continued for the remaining five semesters of the grant.
May 1993	A common final exam is introduced in AC 15 to assess accounting knowledge (posttest). (The same approach is introduced in AC 16 in the following semester.) These common finals (slightly changed from semester to semester) are used to assess knowledge acquisition for the remainder of the grant.
Dec. 1993	Exit interviews, focus groups, and formative exit questionnaires are designed and administered to assess student reactions to specific detailed aspects of each course. These "exit" assessments are continued for the remainder of the grant.
Goal #3: New instructional materials	
Jan. 1993	New instructional materials for the first course in elementary accounting (AC15) are completed and introduced in the Spring Semester, 1993. These materials are significantly revised each semester for the duration of the grant based on semester-by-semester feedback from students and faculty.

Sept. 1993	New instructional materials for the second course in elementary accounting (AC16) are completed and introduced in the Fall Semester, 1993. These materials are significantly revised each semester for the duration of the grant based on semester-by-semester feedback from students and faculty.

Goal #4: Delivery of new materials

Fall, 1992	The project team establishes a capability for desk top publishing of the new instructional materials through purchase of equipment (Gateway 2000 - 486) and software (e.g., FrameMaker, Excel, PowerPoint) and through training of personnel in the use of this technology.
Spring, 1993	The new instructional materials are desk-top published, including student handout assignments (student purchase), schedules, syllabi, solutions, teaching notes, and overheads.
May, 1995	The Accounting Department contracts with Simon & Schuster to custom publish the new instructional materials for both courses, which involves custom texts, student workbooks, and instructor's manuals.
Sept. 1995	Simon & Schuster completes the first printing of the custom published materials and makes items available to bookstores at CSUC and other "adapting" schools -see below.

Goal #5: Dissemination

Mar. 1993	CSUC co-hosts a community college colloquium (Napa Conference) and makes a presentation of the new curriculum.
April 1993	The white paper "A Statement of Course Objectives and Subobjectives" (see **Goal #1**, above) is presented at meetings of the Western Decision Sciences and Western Regional AAA.
Sept. 1993	The new curriculum is presented to the California Society of CPAs Committee on Accounting Education.
Feb. 1994	A ten minute promotional video entitled "Innovative First Year Accounting Curriculum" is completed and used in AC 15 And AC 16 and also sent to schools inquiring about the new curriculum.
Mar. 1994	The new curriculum is presented in a major workshop at the Napa Conference, attended by 54 instructors representing 32 community colleges and 6 universities. Instructors received over 100 pages of the new instructional materials for advance preparation purposes.
Mar. 1994	Schools requesting review copies are sent complete sets of materials for AC 15 (15 schools) and AC16 (13 schools).
May 1994	Project team members present the new curriculum at the AAA Western Regional meeting.
July 1994	Ft. Lewis College (Durango, Colorado) becomes a pilot test site for a one-year test

	(Fall '94 and Spring '95) of the new instructional materials. This school subsequently becomes an "adapting" school - see below.
Sept. 1994	The project team posts a detailed description of the new curriculum to an accounting bulletin board on the internet, which triggers numerous inquiries and follow-up mailings of packages of materials.
Spring 1995	Serious negotiations begin with schools that have expressed an interest in joining with CSUC as "adapting" schools in a dissemination grant proposal to FIPSE.
May 1995	Six schools formally commit to becoming "adapting" schools and are included in CSUC's dissemination grant proposal filed with FIPSE. The six schools are: Castleton State College (VT), Fort Lewis College (CO), Nassau Community College (NY), Sonoma State University (CA), St. Mary's University (TX), and Weber State College (UT). Additionally, Towson State University (MD) decides to adapt the materials without grant support.
Aug. 1995	CSUC hosts a two-day workshop for the six "adapting" schools in preparation for the dissemination grant project.
Aug. 1995	CSUC is notified by FIPSE of acceptance of its dissemination grant for the two-year period October 1995 - September 1997.

Summary

This section has provided an overview of the major milestones and outcomes of the project. This overview indicates that the five goals contained in CSUC's grant proposal have been achieved. Remaining sections of this report will provide a more detailed discussion of the various initiatives undertaken during the course of the grant and the outcomes of those initiatives.

III- Purpose

This section examines in more detail the nature of the "problem" that was addressed during the course of this project. As indicated in Section II, a well-defined set of five project goals (see above) was articulated in the original proposal to FIPSE. Those five goals provided a framework for defining projects and carrying out tasks during the entire project. Moreover, those goals were originally proposed as a way of attacking the following problem:

> ***The traditional view of elementary accounting - as the first course for accounting majors - focuses on preparation of accounting information. Yet, most students who enroll in elementary accounting will not become accounting majors. Hence, how should the elementary accounting course (two-semester sequence) be reengineered to satisfy the needs of its primary audience - adults who will be future users of accounting information in a variety of decision-making contexts?***

The project team's approach for "solving" this problem may be characterized by the step-by-step sequence set forth in Table III.1, below.

Table III.1

Steps Involved in Reengineering Elementary Accounting
-Initial Conceptualization-

1- Develop a set of overall objectives for the course (two-semester sequence) that address the following areas:

- **Knowledge acquisition**
- **Skill development**

2- Flesh out the objectives in (1) by developing a related set of detailed subobjectives and topics

3- Create (design) a set of instructional modules (for each semester) that meet the objectives/subobjectives and provide a coherent delivery of identified topics

4- Deliver (implement) the new instructional materials

5- Assess outcomes

6- Modify course design in light of assessment findings

7- Deliver the revised instructional materials and repeat steps 5-7 in an iterative sequence

As the project team proceeded in this step-by-step approach, several unanticipated problems arose that are briefly described in the following paragraphs.

Problem #1 - Inadequate Attention to Marketing (Communication)

At several points during the three-year grant, particularly during the first year, the project team ran into considerable resistance from "stakeholders," primarily due to stakeholders' lack of understanding of what the project was attempting to accomplish.

- **Students** - Initial reactions of many students were quite negative. They were not prepared for a classroom setting that placed considerable emphasis on the active learning mode (e.g., frequent questions from the instructor, numerous group assignments, oral presentation requirements, etc.). Nor were they prepared for "discovery learning," which, among other things, forced them to view the textbook as just one of several "resources" that could be consulted in addressing assignments. Nor did they feel comfortable with the notion that

certain assignments did not have one right answer, but instead had a range of defensible solutions.

- **Other (non-team) instructors (both within and outside the accounting area)** - Early on, the project team presented to the entire college faculty its statement of course objectives in a white paper. Based on feedback from the faculty, the draft was modified and eventually ratified by the accounting faculty. This same review process was not followed, however, in dealing with the first cut of the newly created instructional materials (step #3 in Table III.1, above). Instead, the new materials went directly into the classroom after intensive review by the project team. This approach was purposely taken in order to speed up the process of classroom testing. However, it received considerable negative reaction from many faculty members who are accustomed to having all new curricula ratified at both the department and college levels **before** implementation and testing in the classroom.

Solution to Problem #1 - The project team addressed these initial "marketing" failures by doing the following:

- **Students** - The project team created a ten-minute promotional video that: i) explained the basic rationale for reengineering elementary accounting; ii) described the course objectives; iii) showed actual activities taking place in the classroom; and iv) provided student testimonials about the "good" things that were happening to them in the reengineered classes. The video message (which is shown on the first day of class) is now reinforced with explanatory materials contained in the syllabus and student workbook. In addition, on the first day of class, instructors now highlight many of the messages provided in the video and instructional materials.
- **Faculty** - The project team partially alleviated faculty concerns by: i) providing other departments with complete sets of the instructional materials; and ii) meeting with selected faculty. However, in order to keep the instructional materials moving iteratively through a semester-by-semester set of tests and improvements (see step #7 in Table III.1, above), the project team resisted attempts by other faculty to bring the new curriculum within the college's formal review channels. The project team not only feared that such a move would drastically reduce the potential for results within the three-year time frame of the grant, but also believed that the college's existing curriculum review process is inconsistent with the notions of "experimentation" and "continuous improvement."

In sum, an important step was missing in the team's original formulation shown in Table III.1, namely, a "marketing/communication" step should have been included between steps 2 and 3, between steps 3 and 4 (and between steps 5 and 6 - see further below).

Problem #2 - Inadequate attention to faculty development

The new curriculum drastically alters the role of the instructor both in and outside the classroom. Within the classroom, the instructor is expected to call on students (by name) frequently during "interactive" lecture sessions, which requires skills in use of the "Socratic" method. The instructor also must assist student teams as they work on their in-class group assignments, which requires "coaching/facilitator" skills. The instructor is also expected to take a more active role in providing useful feedback to students regarding their writing and oral communication skills, which also requires additional "coaching/facilitator" skills. Early on in the project, it became clear to the project team that all of the instructors who would be teaching the new materials would need some degree of professional development in the above skill areas.

Solution to Problem #2 - The following initiatives were undertaken to address professional development needs:

- **Workshop** - Prior to introducing the new curriculum, the project team arranged with a group of faculty (within and outside the college) that had specialized skills in cooperative learning to conduct a workshop on the use of those techniques in elementary accounting.
- **Weekly meetings** - During the three-year period of the grant, the instructors teaching AC 15 and AC16 met weekly (separate meetings for each course) to discuss content, pedagogy, and other matters. These meetings provided a major vehicle for sharing of ideas regarding how best to implement new instructional delivery methods.

Although these initiatives provided a partial solution to the faculty development problem, much more needs to be done. Indeed, in terms of our initial conceptualization - see Table III.1 above - major "doses" of professional development should have been included between steps 2 and 3, between steps 3 and 4, and as part of the iterative sequence described by steps 5 through 7. Note, however, that even though additional professional development were to be pursued, the project team has found that some faculty may simply be unsuited for managing an active, group-centered, decision-oriented learning environment. Success appears to be heavily instructor-dependent.

Problem #3 - Lack of understanding of students' beliefs regarding "active learning"

The new elementary accounting courses attempt to place students in the "active" learning mode. Some students have resisted this change. As pointed out above, their resistance was partially attributable to shortcomings in our "marketing" approach (see Problem #1, above). Our assessment results, however, indicate a more fundamental problem is also involved here. Many students have provided feedback indicating that they believe that they are "paying" the instructor to teach. By this they mean that they expect to receive high quality lectures. In short, these students believe that they are getting their money's worth to the extent that the instructor does a good job of lecturing. These students would appear

to be accepting very little responsibility for their own learning. They seem to view their learning as equated to the professor's lecturing ability rather than to their own active engagement with the subject matter.

At the commencement of this grant, the project team did not have a good understanding of students' beliefs with respect to teaching vs. learning. Moreover, the project team itself was (and continues to be) somewhat divided in its views on this matter.

Solution to Problem #3 - Thus far, the project team has addressed this problem in two ways. First, instructors announce on the first day of class that success in the course depends on the student's willingness to adopt an active learning mode. To this end, an "announcement" has been inserted in the course syllabus (see Table III.2, below), which is discussed by the instructor at the first class meeting and brought up again and again during the semester. Second, the student workbook now contains a section on "careers in accounting," which, among other things, points out that prospective employers are looking for students who have the ability to learn independently (i.e., have "learned how to learn"). Employers seek students who take responsibility for their (lifelong) learning. In short, the message to students is those who are willing to sit back and passively wait to be taught will find themselves at a disadvantage in future employment markets.

These initiatives, at best, have persuaded some students to change their attitudes about learning. Viewed within the context of the entire undergraduate curriculum, it is obvious that one or two courses alone cannot be expected to have much impact on student beliefs regarding their responsibilities for learning. However, the project team's perception is that many other departments and colleges within CSUC are gradually moving towards the active learning mode, which should have a positive impact on students attending our elementary accounting courses.[4]

[4] For example, the university recently established the Center for Learning and Teaching (CELT), which, among other things, is dedicated to developing campuswide programs to enhance student learning. Also, a major initiative is currently underway involving a rethinking of the university's general education requirements which , among other things, recommends greater emphasis on active learning.

Table III.2

Announcement to Students
Regarding the Active Learning Mode

How To Succeed In This Course

To do well in this course, a student must commit to becoming an "active learner" at each class session. This requires that you come to class regularly and be well prepared to discuss assigned readings and individual homework assignments. The student must actively contribute to small-group and full-group discussions of assigned materials. A strong effort at individual and group assignments and discussions, which accounts for approximately 45% (including 20 bonus points) of your grade, will provide you with a solid foundation of knowledge for taking the two examinations.

Note that the "active learning" mode will frequently require you to search through information contained in Handouts, text, and the ***Student Course Outline***. This "discovery learning" process is purposely introduced in elementary accounting to provide greater realism as to how financial problems are actually addressed in the real world.

Problem #4 - Students' lack of computer skills

One of the skill development areas explicitly addressed in the statement of course objectives deals with computer skills. The objective is to:

> ***Assist students in becoming more adept in the use of computers by engaging them in frequent computer applications in business, accounting, and economic decision-making activities.***[5]

In line with this objective, numerous homework assignments have been created that require students to use a computer spreadsheet in preparing a solution. During the first semester in which we used the new instructional materials, we found that students lacked basic computer application skills that would allow them to successfully complete the computer spreadsheet homework assignments.

Solution to Problem #4 - Ideally, the university would require students to become computer literate very early on in their undergraduate programs.[6] Since such a

[5] Lea, R. B., and C. L. DeBerg, "Reengineering Elementary Accounting Education: A Statement of Course Objectives and Subobjectives," Working Paper, October, 1992, p.5. (See the Appendix.)

requirement has not yet been put in place, the project team launched the following initiatives to assist students in improving their computer skills:

- Created a "Computer Spreadsheet" handout (18 pages) that provides instructions on setting up, moving around, creating formulas, printing, saving and other basics involved in using a computer spreadsheet (Excel).
- Established a one-credit course (optional enrollment - pass, no credit) for students who wanted to complete an additional set of simple spreadsheet exercises in order to improve their proficiency. (Note: although this one-credit course is optional, a computer proficiency test is administered early on in the semester to provide a signal to students to seek additional help.)
- Established a mentor program which, among other things, provides students with access to senior accounting majors who are available in a computer lab to assist elementary accounting students in completing their spreadsheet assignments.

As a result of these initiatives, instructors teaching the second semester of elementary accounting are finding that the computer spreadsheet skills of recently entering students have significantly improved compared to students entering in earlier semesters. In addition, acquisition of spreadsheet skills and use of computers in completing all writing assignments generally has been well-received by students.

Problem #5 - Transitional problems for accounting majors moving to intermediate accounting

The new curriculum does not formally introduce debits and credits, trial balances, the accounting cycle, closing entries, and other terminology, concepts, and topics related to the preparation of accounting information.[7] Since all intermediate accounting texts assume that students have had prior exposure to these ideas, elementary accounting students who go on to become accounting majors need to be provided with instructional materials on these topics early on in their first intermediate accounting course.

Solution to Problem #5 - Intermediate accounting instructors have tried two different approaches to deal with this problem:

- Assign a computer-based training module (available commercially) for students to complete, working independently at their own pace.
- Utilize "bridging" instructional materials created by the project team for use during the first several sessions of the first course in intermediate accounting

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[6] The university presently has in place a set of requirements and related courses that address writing and math proficiency skills early on in undergraduate programs. Presently, a computer proficiency requirement is under discussion.

[7] The new curriculum does include the basics of transaction analysis, but debit/credit analysis is replaced with a worksheet/computer spreadsheet approach that focuses on increases/decreases in assets, liabilities, and owners' equity - see Section V for further discussion.

(the Appendix includes selected portions of the bridging materials currently used at CSUC).

It appears that students who have mastered the worksheet/computer spreadsheet approach to transaction analysis that is now presented in elementary accounting have little difficulty in making the transition to debits and credits under either of these approaches.

Problem #6 - Difficulties in assessing outcomes

Initially, assessment (see Table III.1 - Step #5) was viewed rather narrowly. The project team initially addressed assessment by creating the following two instruments:

- **Attitudes Survey** -This survey allows students to self-report their feelings about various aspects of the course and their impressions of the impact that the course had on their writing, interpersonal, and computer skills (see examples of the Attitudes Survey - pre and post tests - included in the Appendix).
- **Knowledge Exam** - This multiple choice exam was designed to test a student's acquisition of knowledge in the areas covered by specific course subobjectives (this exam was also conducted on a pre and post test basis).

After relying exclusively on these two assessment instruments for the first three semesters of the grant period (Fall, 1992; Spring, 1993; and Fall, 1993), the project team began to realize that, for several reasons, the assessment results were not particularly revealing as to what features of the new curriculum was working and what was not working:

- **Time period** - One semester - or even two semesters - is a very short period over which to expect to see significant changes in a student's writing skills or interpersonal skills. This is particularly true in a course, such as accounting, that is focused primarily on knowledge acquisition and only secondarily on development of writing and interpersonal skills.
- **Lack of effort** - To be diagnostic, knowledge exams - both pretest and posttest - must be taken seriously by the student. After reviewing test results for the first three semesters and finding no clear patterns, the project team began to question whether students were in fact working hard on the exams. To address this question further, focus group sessions were conducted at the end of the Fall Semester, 1993, in which, among other things, students were asked about their performance on the skills exam. Students reported that, since the multiple choice test results were not used as a factor in a student's course grade, the exams were not being taken seriously by many students.

Solution to Problem #6 - As discussed in more detail in Section VI, midway through the three-year grant period, the project team decided to expand its assessment activities considerably, adopting a much more comprehensive multiple methods/multiple measures approach. The following four new assessment methods were introduced at the end of the Fall Semester, 1993:

- **Common Finals** - The project team began to carefully control the semester-to-semester changes in the final exam for each course so that a fixed number of questions would continue to address the same issues at essentially the same level of difficulty.
  Exit Interviews - An exit interview questionnaire was designed for administration by our mentors in one-on-one interviews with randomly selected students in each course (AC 15 mentors interviewed students in AC 16 and vice versa - see the Appendix for an example of the interview instrument used for AC 15 students).
- **Exit Focus Groups** - One nonrandomly selected student group from each course met with an instructor from outside the accounting department (Professor D.Toy - Marketing) who facilitated a discussion of their experience in their respective courses. Although the focus group sessions addressed the same issues covered in the exit interviews (and exit questionnaire - see below), students had the opportunity to explore other issues as well.
- **Exit Questionnaires** - These questionnaires (provided to students who were not involved in exit interviews or focus groups - see the Appendix for an example of the questionnaire used in AC 15) addressed the same types of questions addressed in those other forums.

The results of these and other assessment activities are discussed further in Section VI

Problem #7 - Difficulties in achieving continuous improvement of instructional materials

At the outset, the project team committed to the philosophy of continuous improvement, which is explicitly introduced in Table III.1 (Step #7) in terms of an iterative sequence involving design, implementation, assessment, redesign, etc. This notion of continuous improvement addresses two different dimensions of quality, the ramifications of which were not fully appreciated at the outset by the project team.

- **Continuous removal of flaws contained in new and revised materials** - New materials may be expected to include some flaws, even though great care and diligence is undertaken by writers and reviewers. The project team was quite surprised, however, by the numerous flaws that surfaced, not only during the first use of the new materials in the classroom, but also after corrections/revisions were made to those materials.
- **Continuous changing of assignment data** - To reduce the possibly of students sharing solution information on assignments from semester-to-semester, the project team set out to change the data used in assignments each semester, while keeping the overall scenario of the assignment constant. A major problem occurred in trying to make changes in data contained in those assignments involving the "serial cases" (see Section V for a brief discussion of serial cases) since a change in one handout implied the need for changes in the

remaining sequence of handouts in the serial case. The amount of work required to make such changes and the difficulty involved in avoiding errors as changes were made were both considerable.

Solution to Problem #7 - Each semester during the three-year grant, the instructional materials were revised (some semesters involved more significant revisions than others). However, a slowdown occurred in the amount of changes made to the serial cases. Ideally, data in serial cases would be electronically linked from handout to handout using embedding and linking routines now available in word processing and spreadsheet software. Unfortunately, user friendly linking software was not available when the grant was started. Hence, some of the serial case handouts are not yet electronically linked, which continues to limit the extent of changes that can efficiently be made each year.

Problem #8 - Difficulties in managing the grading load

To keep students actively engaged with the subject matter on a day-by-day basis, the reengineered curriculum requires students to complete individual and/or group assignments for virtually every class meeting. This created a major increase in the grading workload, which was sharply criticized by several of the elementary accounting instructors.

Solution to Problem # 8 - Although the project team generally agreed that each instructor needed to be informed of homework results in order to provide useful feedback to students, it also believed that instructors did not have to personally grade all homework in order to provide such feedback. Consequently, instructors have been provided with graders (senior accounting majors and graduate students) to assist in the homework grading task. Also, the elementary accounting mentors now do some of the grading.

Summary

The focus of this grant has been on reengineering the elementary accounting curriculum. As the project team proceeded to perform this reengineering activity, several unanticipated problems arose, involving both technical and behavioral issues. This section provided a brief description of those problems and the project team's approaches for dealing with them. The next section will provide additional details regarding background and origins of the project.

IV -Background and Origins

This section provides additional background and description of the setting in which the reengineering effort took place. As mentioned in Section II, the motivation for this project was provided by external stimuli (e.g., concerns about accounting education expressed by the professional and academic leaders) and by internal questions raised by our own faculty regarding the quality of the elementary accounting curriculum at CSUC. As a result of weekly meetings during the summer of 1990, a faculty team decided to seek grant resources to enable it to undertake a complete reengineering of the entire accounting curriculum. A comprehensive proposal was developed encompassing all courses within CSUC's curriculum for undergraduate accounting majors. The proposal was submitted to two different funding agencies during 1990 and 1991 - FIPSE and the Accounting Education Change Commission (AECC). Neither funding agency selected the team's proposal, although both agencies provided encouragement to the team to proceed further with its ideas.

The above-described grant-writing exercise provided a major vehicle for the faculty team to crystallize its thinking regarding future grant initiatives. In late 1991, the project team decided to narrow the scope of its next grant initiative by focusing on elementary accounting, which had been identified by professional and academic leaders as a high priority target for reengineering.[8] This second grant proposal received funding by FIPSE in August, 1992, in the amount of approximately $200 thousand. As part of the grant agreement, the university committed support in the additional amount of $195 thousand, consisting primarily of faculty release time (including fringes) and indirect contract costs. The remaining paragraphs in this section briefly describe the setting in which the new curriculum was to be designed and implemented.

The CSUC Setting

CSUC is a residential campus of approximately 14,000 students located in a small town of 75,000 population in Northern California (90 miles north of Sacramento). The College of Business offers accredited programs at both the undergraduate and masters levels Enrollments in 1995 include approximately 1900 undergraduate business majors and 60 graduate students. The undergraduate enrollment breaks down by majors as shown in Table IV.1, below.

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[8] Accounting Education Change Commission, "The First Course in Accounting: Position Statement Number Two," Issues in Accounting Education (Fall, 1992), pp.249-253.

Table IV.1

CSUC - College of Business
1995 Enrollments by Major

Major	No. of Students
Prebusiness	1000
Marketing	230
Accounting	220
Finance	150
Management	150
MIS	100
Production operations	50
Total	1900

Elementary Accounting

Each semester, approximately 20 sections of elementary accounting are taught (roughly divided equally between AC 15 and AC 16). A semester involves 15 weeks of classes (2 1/2 hours per week of in-class contact time, e.g., TTH - 75 minutes each; MWF - 50 minutes each). Class sizes run approximately 35 students or less.

Elementary accounting is taught to a population of students comprised of the following:

- Accounting majors 10%
- Business, nonaccounting majors 55%
- Other majors (nonbusiness) 35%

From this breakdown, it is clear that most students enrolled in elementary accounting represent users rather than preparers of accounting information. (As pointed out in Section III, this fact alone was a key driver in the team's reengineering efforts)

Existing Curriculum Content and Delivery

The elementary accounting curriculum that was in place at the time the FIPSE grant commenced may be described as traditional in both content and delivery. Even though accounting majors comprised only 10% of the students in elementary accounting, the content of the elementary accounting courses was designed to provide accounting majors with an initial exposure to the accounting process and to the basic set of financial statements derived from that process. Preparation procedures and rules represented a major component of the curriculum. Likewise, delivery methods were also quite traditional (although some instructors had already begun to experiment with collaborative teaching techniques). Much time was spent in the lecture mode, which was supplemented with discussion of homework problems that were worked out by instructors on the blackboard.

Summary

This section briefly identified the setting in which the reengineering effort was to take place. The next section describes details of the project team's reengineering strategy and major features of the new curriculum.

V - Project Description

For purposes of description, the overall reengineering project may be divided into three major parts:

- Reengineering of the curriculum
- Outcome assessment
- Dissemination.

Major events taking place under dissemination have already been described in Section II (see Table II.1, above). Outcome assessment will be considered in detail in Section VI, below. The remainder of this section describes: i) the project team's strategy for reengineering the elementary accounting curriculum; and ii) major features of the new curriculum.

Strategy for Reengineering the Curriculum

The reengineering effort began with the formation of a team of faculty who had been active in the development of the grant and/or had expressed an interest in becoming involved in the reengineering effort after the grant was obtained. Early on, the team decided on the following strategy elements:

- **Start from scratch** - The new curriculum was to be designed from scratch. Rather than search for an existing model that the project team could modify, it decided to start with a blank piece of paper.
- **Innovate** - The team purposely set out to be innovative, to take risks, and to view the reengineering effort as a sequence of experiments that were to be undertaken with the goal of continuous improvement.
- **Articulate objectives** - It was agreed that the new curriculum would flow from an agreed upon set of course objectives and subobjectives. A white paper describing those objectives and subobjectives became the first major output of the project.[9]
- **Create individual modules** - It was agreed that individual team members would create specific modules.[10] A module included background materials, individual student assignments, small group assignments, and related solutions that were consistent with identified objectives and subobjectives.
- **Empower the team** - Modules created by an individual faculty members were presented to the team, which empowered itself to make necessary additions, deletions, and modifications. In short, it was agreed that the curriculum was owned by the team, not by an individual faculty member.

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[9] A copy of the white paper is included in the Appendix.

[10] Faculty were compensated for this work based on outputs achieved. Compensation involved cash payments from grant funds and/or release time.

- **Commit** - Team members agreed to meet weekly to review progress and to make curricula decisions.

With only minor modifications, this strategy was followed for the duration of the three-year grant.

Major Features of the New Curriculum

Major features that distinguish the new curriculum from traditional courses in elementary accounting are the following:

- **User Orientation** - Accounting knowledge is addressed from the point of view of the user/decision-maker rather than from the perspective of the preparer of accounting information.
- **Problem-solving skills** - To enhance a student's problem solving skills, many of the individual and group assignments have no right answers, but instead allow for a range of defensible solutions
- **Interpersonal Skills** - Students are placed in the active learning mode with a major emphasis on group activities in order to provide them with opportunities to develop communication and other interpersonal skills..
- **Computer Skills** - Students are required to prepare all homework solutions using appropriate word processing and/or computer spreadsheet applications in order to improve their computer skills. No handwritten solutions are accepted for grading.
- **Serial Cases** - Within each semester, many of the student assignments (both individual and small group assignments) involve a sequence of decisions related to a single company as it moves through time. The case framework provides a realistic context in which to present accounting concepts.
- **Simulation** - In order to acquaint students with features of "real" production processes that underlie accounting information, a manufacturing simulation was created involving assembly line activities for the production of automobiles using LEGO® blocks.
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Each of these features is described further in the paragraphs that follow.[11]

User Orientation

Traditional courses in elementary accounting (including the courses at CSUC before reengineering) reflect the perspective of the preparer of accounting information. Yet, As

[11] Included with this final report (under separate covers) are copies (one set only) of the two, custom-published student workbooks that contain the current versions of the new curriculum for AC 15 and AC 16 (except for the accompanying texts, which were custom published under separate cover). These workbooks are entitled: **Introduction to Accounting I: An Interactive Case Approach** (hereinafter referred to as: Intro. I); **Introduction to Accounting II: An Interactive Case Approach** (hereinafter referred to as: Intro. II).

pointed out in Section IV, 90 percent of the student population enrolled in elementary accounting at CSUC will not go on to become accounting majors. Instead, they will pursue a range of nonaccounting careers that will inevitably involve them into a wide variety of organizations (business, government, social, charitable, etc.) where they will be confronted with the need to make economic decisions. Generally, accounting information will be a vital input to those decisions. In short, all adults in today's society need to become "accounting literate," i.e., need to be able to use accounting information effectively in making economic decisions. This "user" orientation became a guiding light for the team's reengineering efforts.

Of course, to understand how to use accounting information, a student must have a grasp of how economic events that take place within an organization are eventually translated into accounting information. Hence, the new curriculum continues to place considerable emphasis on this translation process, but without getting into the bookkeeping details of debits and credits. The device introduced to deal with translation and recording involves a worksheet/computer spreadsheet approach.[12]

Skill Development

To become effective decision-makers in today's society, students not only need to understand the information that represents inputs to decisions, but also must develop skills in three key areas related to decision-making: i) unstructured problem-solving skills; ii) interpersonal skills; and iii) computer skills. The relevance of these skills to decision-making is clear and immediate. First, the possession of creative problem-solving skills is obviously desirable. In real life settings, economic decision problems neither present themselves in nicely structured, clearly defined terms, nor do they typically lead to well-defined solutions with a single, correct answer. Instead, real problems are ill-structured and "messy." Students need to recognize these complexities and gain practice in dealing with them. The new curriculum provides numerous individual and group assignments that present problems in unstructured formats.

Second, real economic decision problems arising in today's organizations are often addressed by groups or teams rather than by individuals. Problems and proposed solutions need to be effectively communicated to others, both orally and in writing. Proposed courses of action often need to be debated. Thus, interpersonal skills play a key role. The new curriculum continually places students in group settings, which provide them with opportunities to develop their interpersonal skills.

Finally, it is clear that personal computers will play an ever-increasing role in economic decision making. Accordingly, the new curriculum requires students to make continual use of personal computers, focusing on word processing and spreadsheet applications.

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[12] See Intro I, pp.65-81.

Serial Cases[13]

Two serial cases are used in the new curriculum - John the Painter (AC 15) and The California Car Company (AC 16).[14] A serial case involves a sequence of decisions related to a single company. A serial case unfolds sequentially. Students are first given sufficient background information about a company to address an initial set of decision problems. After addressing those problems, students are given additional information about the same company, which builds both on the prior background and on the initial decisions just made. The stage is then set for a second set of decision problems. This sequence - new information leading to new decisions - proceeds in a serial fashion through several iterations during the semester. Each iteration adds complexities to the same company and its environment.

The basic rationale for using serial cases lies in the notion that students will more fully understand and appreciate the systems, processes, and integrated nature of business if they work extensively with one company that is viewed from many perspectives. From an accounting standpoint, this continuity also allows students to relate the impact of one accounting concept or decision to those made earlier in the course.

The advantages of serial cases are that they provide a richer context and are also more efficient. The context is richer because more emphasis can be placed on the environmental setting if it only needs to be developed for one company during the semester. (Keep in mind that context is gradually enriched as the serial case builds during the semester.) Serial cases are also more efficient because students only need to become familiar with one, albeit rich, context.

Simulation

A unique feature of the California Car Company serial case used in AC 16 is the two-part simulation that is run in class at two different class sessions. The simulation engages all students (each student has a role to play in each simulation) in an assembly line process involving the assembly of automobiles (compacts and sedans) using LEGO® blocks. The objectives of the simulation are to: i) acquaint students with various activities found in a manufacturing setting; ii) show students how real economic events that take place in manufacturing are translated into accounting information; and iii) demonstrate to students some of the advantages of moving from a traditional to a just-in-time assembly format.

Summary

This section has briefly described major features of the new curriculum, many of which are not found in traditional elementary accounting courses. The next section will examine the

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[13] In conjunctins with the FIPSE grant, Professors Adams and Lea authored a paper that examines the concept of the serial case as a powerful pedagogy for introductory accounting. The paper is available upon request from the project CoDirectors (Lea and DeBerg).

[14] See the Appendix for lists of assignments (and brief descriptions) that are involved in each of these serial cases.

impact (outcomes) of these new features as reflected in the assessment data that was collected during the six semesters of the grant.

VI - Project Results

This section briefly describes various "outcomes" of the project that are evident from assessment data collected during the grant. Table VI.1 provides an overview of the nature and quantity of assessment data collected during the six semesters involved in the grant.

Formative Survey Results

As indicated in Section III, starting at the end of the Fall Semester, 1993, the project team decided to introduce a set of formative survey methods involving three different "exit" assessment approaches:

- Exit interviews
- Exit focus groups
- Exit Questionnaires

The team's intent in using these three approaches was to give students the opportunity to provide detailed feedback on five specific aspects of AC 15 and AC 16 (examples of the exit interview and exit questionnaire instruments are included in the Appendix - focus group sessions addressed questions similar to those contained in those two instruments):

- Active/discovery learning
- Group work
- Instructional techniques
- Instructional materials
- Mentor tasks

Results of these various exit assessment activities are shown for AC 15 and AC 16 in Tables VI.2 and VI.3, respectively.

Table VI.1

Assessment Data Collected
Fall, 1992 through Spring,, 1995

	Number of Students											
Course/	Fall 1992		Spring 1993		Fall 1993		Spring 1994		Fall 1994		Spring 1995	
Type of Assessment	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
AC 15:												
Attitudes	375	273	294	285	353	345	248	237	364	321	322	324
Knowledge	nm	273	302	237	341	284	nm	nm	nm	nm	nm	nm
Common final exam	nm	nm	nm	260	nm	227	nm	143	nm	295	nm	267
Formative questionnaire	nm	nm	nm	238	nm	40	nm	118	nm	205	nm	152
Focus group	nm	nm	nm	nm	nm	5	nm	4	nm	5	nm	14
Exit interview	nm	nm	nm	nm	nm	9	nm	9	nm	10	nm	6
AC 16:												
Attitudes	298	202	291	191	264	233	303	321	228	140	255	190
Knowledge	nm	221	281	180	264	202	nm	nm	nm	nm	nm	nm
Common final exam	nm	nm	nm	nm	nm	223	nm	292	nm	123	nm	174
Formative questionnaire	nm	nm	nm	nm	nm	104	nm	215	nm	81	nm	100
Focus group	nm	nm	nm	nm	nm	4	nm	3	nm	3	nm	8
Exit interview	nm	nm	nm	nm	nm	6	nm	9	nm	8	nm	4
Fin 150												
attitudes	nm	nm	nm	249	nm	293	nm	212	nm	131	nm	58
knowledge	nm	nm	nm	241	nm	143	nm	nm	nm	nm	nm	nm
Badm 293/294:												
attitudes	nm	nm	nm	297	nm	133	nm	270	nm	142	nm	198
knowledge	nm	nm	nm	298	nm	66	nm	nm	nm	nm	nm	nm

Key:

cell entries = number of students responding
nm = not measured

Table VI.2

ACCOUNTING 15
FORMATIVE SURVEY RESULTS
Spring '95, Fall '94, Spring '94, and Fall '93

Description	Focus Groups				Exit Interviews				Exit Questions				Summary: Working / Not Working			
	S '95	F '94	S '94	F '93	S '95	F '94	S '94	F '93	S '95	F '94	S '94	F '93	S '95	F '94	S '94	F '93
Active Learning:																
Advance preparation	**	+	0	+	+	+	+/0	+	+	+	+	+	w	w	w	w
Instructor questions		+	-	+	+	+	+/-	+	0/+	+	0/+	0/+	w	w	m	w
Small group - in class		+	+	+	+	+	+	+/0	+	+	+	+/0	w	w	w	w
Small group - outside of class		+	+	-	+	+	+	na	0/+	0/+	0	na	w	w	w	nw
Oral presentations		+	0	-	0	0/+	+/0	0	0/+	+	+/0	0	w	w	w	nw
Short quizzes		+	m	na	0	0/+	m	na	0	0/+	0/-	na	m	w	nw	na
Discovery learning		na	-	0/-	0	0/+	m	0	0	0	0/-	0	m	m	nw	nw
Group work		+	+	+	+	0/+	+	+	0/+	0/+	+	+/0	w	w	w	w
Instructional techniques:																
Mentors		+	+	+	+	+	+	+	+	0/+	+	+	w	w	w	w
Computers		+	+	+	+	+	+	+	+	+	+	+	w	w	w	w
Unstructured problems		+	+	+	+	+	+	+/0	0/+	0/+	+/0	+/0	w	w	w	w
Progressive case		+	+	+	0	+	+	+/0	+	+	+/0	+	w	w	w	w
Analysis and essay exams		+	0	na	+	+	+/0	na	0	0	m	na	w	w	w	na
Computer proficiency tests		0	na	na	0	m	na	na	0/+	0/+	na	na	m	m	na	na
Instructional materials:																
SLA text		0/-	na	na	0/-	0/-	na	na	0/-	-	na	na	nw	nw	na	na
Overheads		na	na	na	+	+	na	na	+	+	na	na	w	w	na	na
SCO		+	na	na	0	+	na	na	+	+	na	na	w	w	na	na
Individual assignments		+	na	na	+/0	+	na	na	+	+	na	na	w	w	na	na
Group assignments		+	na	na	+	0/+	na	na	+	+	na	na	w	w	na	na
Midterm exam		0	na	na	+	+	na	na	0/+	0/+	na	na	w	w	na	na
Individual/group quizzes		+	na	na	0	m	na	na	0/+	0	na	na	m	m	na	na

Description	Focus Groups				Exit Interviews				Exit Questions				Summary: Working / Not Working			
	S '95	F '94	S '94	F '93	S '95	F '94	S '94	F '93	S '95	F '94	S '94	F '93	S '95	F '94	S '94	F '93
Mentor tasks:																
Spreadsheet training		na	na	na	+	0/+	na	na	0/+	0	na	na	w	m	na	na
In class assistance		+	na	na	+	+	na	na	0/+	0	na	na	w	w	na	na
Lab hours		+	na	na	+	0	na	na	+	0/+	na	na	w	w	na	na
Phone inquiries		na	na	na	0/+	0/+	na	na	0	0	na	na	m	m	na	na

Legend:

+ = overall positive rating by students
0 = " neutral " " "
- = " negative " " "
m = mixed reaction by students

na = not applicable or not addressed this semester
w = item appears to be working
nw = item appears to be not working
** = changed focus group format this semester - see narrative

Table VI.3

ACCOUNTING 16
FORMATIVE SURVEY RESULTS
Spring '95, Fall, '94, Spring '94 and Fall '93

Description	Focus Groups				Exit Interviews				Exit Questions				Summary: Working / Not Working			
	S '95	F '94	S '94	F '93	S '95	F '94	S '94	F '93	S '95	F '94	S '94	F '93	S '95	F '94	S'94	F '93
Active Learning:																
Advance preparation	**	+	+	+	+/0	+	+	+	+	+	+	+	w	w	w	w
Instructor questions		+	+	-	+/0	0	+	+/0	0/+	0/+	+	+	w	w	w	w
Small group - in class		+	+	+	+	+	+	+/0	+	+	+	+	w	w	w	w
Small group - outside of class		na	-	-	na	na	m	na	na	na	0/-	na	na	na	nw	nw
Oral presentations		na	0	-	na	na	0	0	na	na	0/-	0	na	na	nw	nw
Individual written reports		0	+	na	+/0	0	+/0	na	0/+	0/+	+/0	na	w	w	w	na
Short quizzes		+	m	na	0/-	+	+/0	na	0	0/+	m	na	m	w	m	na
Discovery learning		na	-	-	m	0/+	+/-	0	-	0/-	0/-	0	m	m	nw	nw
Group work		+	0	-	0/+	0/+	+/0	m	0/+	+	+	+/0	w	w	w	m
Instructional techniques:																
Mentors		0	+	+/0	+	+	+/0	+/0	0/+	0	+	+	w	w	w	w
Computers		+	+	+/0	+	+	+/0	+/0	+	+	+	+	w	w	w	w
Unstructured problems		+	+	+/0	+	+/0	+/0	+/0	0	0	+	+/0	w	w	w	w
Progressive case		+	+	+/0	+/0	+	+	+	+	+	+	+	w	w	w	w
Analysis and essay exams		+	+	na	m	+/0	m	na	-	0	+/0	na	m	w	w	na
Simulations and LEGOS[R]		+	0	+	+	0	+	+	+	+	+	+	w	w	w	w
Videos		+	+	+	0/-	0/-	m	+/0	0	0/+	+/0	+	m	w	w	w
Computer proficiency tests		0	0	na	m	+	+/0	na	0/+	+	+/0	na	m	w	w	na
Caterpillar annual report		+	+	na	0	+	0	na	0/+	+	+/0	na	w	w	w	na

Description	Focus Groups				Exit Interviews				Exit Questions				Summary: Working / Not Working			
	S '95	F '94	S '94	F '93	S '95	F '94	S '94	F '93	S '95	F '94	S '94	F '93	S '95	F '94	S'94	F '93
Instructional materials:																
SLA text		-	na	na	-	-	na	na	-	-	na	na	nw	nw	na	na
Overheads		+	na	na	m	m	na	na	+	0/+	na	na	w	w	na	na
SCO		+	na	na	m	+	na	na	+	+	na	na	w	w	na	na
Individual assignments		+	na	na	0	+	na	na	+	o/+	na	na	w	w	na	na
Group assignments		+	na	na	+	+	na	na	+	0/+	na	na	w	w	na	na
Midterm exam		0	na	na	-	+/0	na	na	-	0	na	na	nw	w	na	na
Individual/group quizzes		+	na	na	+	+	na	na	0/+	0/+	na	na	w	w	na	na
Mentor tasks:																
Spreadsheet training		-	na	na	+/0	+	na	na	0/+	0/-	na	na	w	m	na	na
In class assistance		-	na	na	+	+	na	na	+	0	na	na	w	m	na	na
Lab hours		na	na	na	+	+/0	na	na	+	0/+	na	na	w	w	na	na
Phone inquiries		+	na	na	+/0	0	na	na	+	0	na	na	w	w	na	na

Legend:

+ = overall positive rating by students
0 = " neutral " " "
- = " negative " " "
m = mixed reaction by students

na = not applicable or not addressed this semester
w = item appears to be working
nw = item appears to be not working
** = changed focus group format this semester - see narrative

The exit feedback identified the following aspects of the new curricula that, from the students' perspective, were working:

AC 15:

- **Active learning** - Various aspects of the active learning mode are working, including daily advance preparation (individual homework assignments), frequent instructor questions, in-class group work, and oral presentations.
- **Group activity** - Collaborative learning activities are working.
- **Instructional materials and techniques** - Various instructional materials and techniques are working, including the use of mentors, integration of computers, use of unstructured problems, the serial case (John the Painter), and analysis/essay exams, student course outline (SCO) and related overheads, and individual and group assignments.
- **Mentor activities** - Mentor activities are working.

AC 16:

- **Active learning** - Various aspects of the active learning mode are working, including daily advance preparation (individual homework assignments), frequent instructor questions, in-class group work, and individual written reports.
- **Group activity** - Collaborative learning activities are working.
- **Instructional materials and techniques** - Various instructional materials and techniques are working, including the use of mentors, integration of computers, use of unstructured problems, the progressive case (California Car Company), analysis/essay exams, simulations and the use of LEGOS^{R}, and use of the Caterpillar annual report, the student course outline (SCO) and related overheads, individual and group assignments, and individual/group quizzes
- **Mentor activities** - Mentor activities are working.

As Tables VI.2 and VI.3 also indicate, however, some of the feedback at the end of particular semesters was negative. As a result of this negative feedback, the project team, at various points during the grant, made the following adjustments to the curricula for AC 15 and AC 16:

Active learning/discovery learning:

- Significantly reduced the amount of small group work that had to be done outside of class
- Introduced explicit criteria by which oral presentations would be evaluated
- Increased the "marketing" effort extolling the benefits of discovery learning

Instructional materials:

- Replaced the SLA text with a custom published text that contains materials tailored to individual and group assignments

Mentor tasks:

- Provided more direction to mentors regarding ways in which they could assist students

Group Systems V experiment

At the end of the last semester of the grant (Spring, 1995), the project team decided to experiment with an alternative format for student focus groups, which involved the use of Group Systems V. This computer "groupware" allows 15 students (per course) to simultaneously and interactively address various facets of each course. The software allows students to "brainstorm" (e.g., what did you like most about AC 15?), to vote on issues (e.g., strongly agree ... strongly disagree), and to rank various aspects of the course in terms of "importance to learning." In general, the Group Systems V results for the Spring Semester, 1995 are consistent with results obtained through the other exit survey approaches. Interestingly, the Group Systems V approach provides a much "richer" set of student comments than obtained by any of the other formative survey approaches and therefore holds promise as an effective assessment alternative for the future.

A Group Systems V session was also held at the end of the Spring Semester, 1995, for all faculty who had taught AC 15 (five instructors participated) and AC 16 (four instructors participated) using the reengineered materials. Among other things, the instructors for each course were asked to rank order various instructional materials and techniques in terms of their relative importance to students in learning the materials. Tables VI. 4 and VI.5 show the results of this ranking exercise.

Table VI.4

AC 15 Instructor Ranking of Various Instructional Materials and Techniques - Importance in Student Learning -

Items listed in decending order of importance:

1. **Use of the serial case (John the Painter)**
2. **Individual homework assignments**
3. **Individual/group quizzes**
4. **Use of the personal computer**
5. **Group assignments**
6. **Student Course Outline**
7. **Midterm exam**
8. **Overhead transparencies**
9. **Use of mentors**
10. **Use of unstructered problems (individual and group assaignments)**
11. **Use of hands-on computer proficiency tests**
12. **Textbook**

Table VI.5

AC 16 Instructor Ranking of Various Instructional Materials and Techniques - Importance in Student Learning -

Items listed in decending order of importance:

1. **Use of personal computer**
2. **Individual homework assignments**
3. **Student course outline**
4. **Individual/group quizzes**
5. **Overhead transparencies**
6. **Use of in-class simulation and LEGO^{R} blocks**
7. **Use of videos**
8. **Midterm exam**
9. **Use of the serial case (California Car Company**
10. **Use of Caterpillar Inc. annual report**
11. **Group assignments**
12. **Use of Mentors**
13. **Use of unstructured problems (individual and group assignments)**
14. **Use of hands-on computer proficiency tests**
15. **Textbook**

Other Assessment Findings

In addition to the formative surveys discussed above, the following additional assessments were used during the course of the grant in AC 15 and AC 16:

- **Attitudes** - Attitudes surveys were conducted at the beginning and end of each of the six semesters of the grant. Tables A.1 through A.4 in the Appendix provide listings of the variables used in these surveys, together with semester-by-semester mean scores and selected comparison tests.[15]
- **Knowledge** - At the end of each of the first three semesters of the grant, multiple choice exams were used to collect data on knowledge acquisition. These multiple choice exams were found to be ineffective (see comments in Section III, above - Problem #6), and, accordingly, were discontinued in the Spring, 1994.
- **Common final exams** - As indicated in Section III, in the Fall, 1993, the project team began to control carefully the semester-by-semester changes in the final exam for each course so that a fixed number of questions addressed the same issues at essentially the same level of difficulty. Tables A.5 and A.6 in the Appendix show semester-by-semester mean scores and standard deviations (question-by-question and in total).

Brief comments on the attitudes survey and common final assessment results are provided in the paragraphs that follow.

Attitudes Survey Findings

Based on an inspection of the results reported in Tables A.1 through A.4 the following findings are of particular interest:

- **AC 15:**
  - **Pretest scores** - The following shifts in pretest scores over the period of the grant (Table A.1) are noteworthy:
    - Student attitudes towards the effectiveness of group work appear to becoming increasingly positive
    - Students report that they are increasingly proficient as writers and computer users

[15] As indicated in Table VI.1, attitudes surveys were also conducted in two other courses that business students generally take after taking elementary accounting - FIN 150 (Survey of Finance) and BADM 293/294 (Business capstone). These data turned out to be particularly difficult to interpret because of the time lag between those courses and elementary accounting; consequently, these survey results are not included in this report.

- **Posttest scores** - The following shifts in posttest scores (Table A.2) are of interest:[16]
  - Students find the new curriculum to be challenging and interesting, yet very time consuming
  - Composite measures regarding group, writing, and computer activities are all moving in the desired direction and have changed significantly over time.

- **AC 16:**
  - **Pretest scores** - The following shifts in pretest scores (Table A.3) are noteworthy:
    - Students report that they are increasingly proficient as computer users
  - **Posttest scores** - The following shifts in posttest scores (Table A.4) are of interest:[17]
    - Students find the new curriculum to be challenging and interesting, yet very time consuming and difficult
    - Composite measures regarding group and computer activities are both moving in the desired direction and have changed significantly over time.

The above described shifts in ***pretest*** scores may reflect impacts of gradual changes in curricula throughout the university (e.g., increased emphasis on writing skills, collaborative learning, and computer skills) as well as "grapevine" effects of students passing on their experience with the new curriculum to other students. In contrast, the shifts in ***posttest*** scores appear to be more directly attributable to impacts of the new curriculum.

Common Final Exam Findings

Examples of common final exams for AC 15 and AC 16 for the Spring Semester, 1995 are included in the Appendix. These exams were developed by the project team (working together in weekly meetings) and were designed to be responsive to the overall objectives and subobjectives that have been articulated for each course.[18] The semester-by-semester results reported in Tables A.5 and A.6 show consistency over time, except for the following: i) AC 15 - Fall, 1993, question #5: this question turned out to be unexpectedly difficult; and, ii) AC 16 - Fall, 1994 and Spring, 1995, question #9: because of a change in course content, the final exam was expanded to nine questions in the Fall, 1994, which makes comparisons with earlier semesters difficult to interpret.

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[16] Note that the contrast effect shown in Table A.2 compares the results for the Fall, 1992 (reflecting the old curriculum) to the average results for Spring, 1993 through Spring, 1995 (reflecting the new curriculum).

[17] Note that the contrast effect shown in Table A.4 compares the average results for the Fall, 1992 and Spring 1993 (reflecting the old curriculum) to the average results for Spring, 1993 through Spring, 1995 (reflecting the new curriculum).

[18] Perhaps the most important test of validity of these exams is the faculty's "comfort level" that the exams do indeed address the relevant issues addressed in the course.

Retention Rates

As shown in Table VI.6, retention rates before and after introduction of the reengineered curriculum remained relatively constant. This result has been encouraging because students have also reported that they have found the new curriculum to be significantly more time consuming (see item # 6 in Tables A.2 and A.4).

Table VI.6

Retention Rates - AC 15 and AC 16
Spring 1992 through Spring 1995

	---Accounting 15---			--- Accounting 16---		
	Census*	Final**	Retention Percent***	Census	Final	Retention Percent
Spring '92	344	327	95.06%	382	347	90.84%
Fall '92	391	368	94.12%	299	294	98.33%
Spring '93	305	296	97.05%	327	321	98.17%
Fall '93	357	347	97.20%	254	241	94.88%
Spring '94	274	251	91.61%	316	281	88.92%
Fall '94	356	321	90.17%	226	210	92.92%
Spring '95	308	291	94.48%	267	247	92.51%
Total	2335	2201	94.26%	2071	1941	93.72%
Before Reeng.****	735	695	94.56%	1008	962	95.44%
After Reeng.*****	1600	1506	94.13%	1063	979	92.10%

Notes:
* Census = enrollment recorded on the fourth Friday of each semester
**Final = enrollment shown on final grade sheets
***Retention percent = Final/Census X 100%
****Before Reengineering.:
-AC 15 - includes Spring '92 and Fall '92
-AC 16 - includes Spring '92 Through Spring '93

*****After Reengineering.:
-AC 15 - includes Spring '93 through Spring '95
-AC 16 - includes Fall '93 through Spring '95

Summary

This section briefly reviewed findings revealed by assessment data collected during the grant. From a reengineering perspective, by far the most useful of these data were the various formative exit data, which pinpointed areas requiring additional attention. In contrast, the attitudes surveys provided more generalized impressions of how the new curriculum was impacting skills and attitudes.

VII - Summary and Conclusions

Previous sections have provided summaries related to the detailed considerations discussed in those sections. The purpose of this section is to briefly identify some additional "global" conclusions regarding the three-year project.

Student learning

After three years of experimentation with the active learning mode, the faculty who have been involved in the teaching of introductory accounting have generally become convinced of the superiority of this approach compared to the traditional lecture format. In addition, assessment feedback data provided by students shows that they have increasingly accepted the active learning format. The ongoing challenge that arises from this change in classroom activities is the need to continue to strengthen the faculty's "facilitator" skills.

Curriculum development

As a result of meeting weekly for the last three years to address curriculum issues, the project team has concluded the following:

- **Time commitment** - To start from scratch redesigning a one-year curriculum turns out to be a very time-consuming process. Although compensation provided by the FIPSE grant and release time provided by the university provided partial reimbursement for these efforts, much of the time represents uncompensated investments by the faculty to improve the quality of CSUC's accounting program.
- **Intellectual challenge** - Members of the project team found that the development of new curricula was quite challenging intellectually. Indeed, members of the team would now argue strongly that instructional development should be recognized as a worthwhile scholarly activity and should be given weight in faculty evaluations commensurate with that given to the more traditional basic and applied research activities.
- **Continuous improvement** - Instead of viewing the curriculum revision problem as being "solved" by the completion of certain tasks (e.g., by publishing a new, up-to-date textbook), most members of the project team now view the curriculum and related instructional materials as "living" documents that should be continuously improved over time. The shift in perspective means not only that processes must be put in place to support continuous improvement, but also that traditional approaches for approval of curricula used at universities (i.e., successive levels of review through a hierarchical organization structure) need to be modified to support continuous improvement processes.
- **Faculty collaboration and team empowerment** - Having lived through three years of weekly meetings, the project team now generally recognizes not only

that faculty collaboration results in superior curricula, but also that "ownership" of curricula, at least for introductory courses involving hundreds of students, should reside with a team, and not with individual faculty.

Assessment

As part of their Ph.D. training, most, if not all, members of the project team had been exposed to the behavioral experiment literature that emphasized the design and execution of controlled experiments. It seemed very natural, therefore, for the project team to view curriculum development within an assessment framework of pretest-treatment-posttest analysis. Although the project team pursued this approach in its initial assessment efforts, the team was disappointed in the feedback it was receiving about what aspects of the new curriculum were working or not working. Consequently, the team introduced other assessment methods - exit interviews and focus groups - that allowed for face-to-face discussions with students. These alternative assessment approaches provided much better insights as to what aspects of the curriculum required further attention.

VIII - Appendix

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Serial Cases - John the Painter (AC 15) and California Car Company (AC 16)

Table A-1 - Pretest Attitudes Survey: Means and Comparisons - Accounting 15

Table A-2 - Posttest Attitudes Survey: Means and Comparisons - Accounting 15

Table A-3 - Pretest Attitudes Survey: Means and Comparisons - Accounting 16

Table A-4 - Posttest Attitudes Survey: Means and Comparisons - Accounting 16

Table A-5 - Final Exam Scores: Means and Standard Deviations for Individual Questions and Total Scores - Accounting 15

Table A-6 - Final Exam Scores: Means and Standard Deviations for Individual Questions and Total Scores - Accounting 16

AC 15 Final Exam - Spring, 1995

AC 16 Final Exam - Spring, 1995

Exit Interview - Accounting 15 - Spring 1995

Exit Questionnaire - Accounting 15 - Spring 1995

"Re-Engineering Elementary Accounting Education - A Statement of Course Objectives and Subobjectives," by Curtis L. DeBerg and Richard B. Lea

"Bridging Principles and Intermediate Accounting Using Electronic Spreadsheets," by Curtis L. DeBerg

Under separate cover:

Introduction to Accounting I - An Interactive Case Approach (one copy only)

Introduction to Accounting II - An Interactive Case Approach (one copy only)

Serial Cases:
John the Painter (AC 15)
and
California Car Company (AC 16)

The first semester course (AC 15) makes extensive use of the ***serial case*** called "John the Painter." A brief overview of this serial case follows (See Intro I):

- Handout 1-2: John is faced with an economic decision regarding best use of summer time: whether to go to summer school, work at a dry cleaning plant, or start his own painting business. Students analyse the decision problem.

- Handout 1-5: John opens his own painting business and completes the first summer of operations. Students complete the balance sheet at the end of the summer and look at the changes in owners equity to decide whether the business was a success.

- Handout 1-8: John is trying to understand how well he did after the summer is over. Students must take his cash receipts and disbursements list and prepare an income statement and a cash flow statement (both direct and indirect).

- Handout 2-3: John meets Joanna who wants to start a decorating business. They decide to consider being partners. They each estimate their revenues, their variable expenses and their fixed expenses for two departments - painting and decorating. Students must prepare a contribution format budgeted income statement by department. They then compute a break-even point for the proposed partnership.

- Handout 2-4: John's uncle Ernie suggests that John and Joanna seriously look at incorporating. They decide to incorporate and become J&J Corporation. Uncle Ernie also suggests that they look at a best case and worst case scenario, i.e., what profits would be if their revenues were 90% and 110% of the projected amounts. Students must convert a partnership balance sheet to a corporate balance sheet and perform the sensitivity analysis recommended by Uncle Ernie.

- Handout 2-6: The J&J corporation has now been operating for three months and John and Joanna look at their income statement and compare it with their projections. Students are asked to prepare a flexible budget given the actual level of sales and to evaluate performance by looking at planning vs performance variances.

- Handout 3-1: Several years later, J&J corporation decides to expand. Students are assigned the role of financial consultant to assist J&J in deciding whether to purchase Thompson's Paint and Wallpaper. By looking at the financial statements of the Thompson store, students analyze sales and accounts receivable, cost of sales and inventory, and fixed assets. They also analyse growth trends and various turnover ratios over the past few years and make comparisons to industry norms.

- Handout 3-4: J&J Corporation decides to investigate further the purchase of Thompson's and needs to determine what financing is available. Students examine a bank offer involving a mortgage on the real estate, and they compare this option to Bud Thompson's offer to lease his land and building. Students consider the pros and cons of leases vs. mortgages. In addition, students learn the concept of the time value of money, and prepare amortization schedules for each of the two options.

The second semester course (AC 16) makes extensive use of the ***serial case*** called "California Car Company." A brief overview of this serial case follows (See Intro II):

- **Handout #2-1:** Students are introduced to the California Car Company (CCC). The introduction includes financial information, industry background, environmental setting, profiles of top management, plant layout and cost structure.

- **Handout #2-2:** Roles of production personnel are explained and the assembly process is detailed in preparation of the in-class simulation where students assemble LEGO® cars.

- **Handout #2-3:** Problems experienced in the simulation are compared to those witnessed by students in the "Styro Inc." video.

- **Handout #2-4:** Students project CCC's financial results for 1998 and the projected cost of manufacturing each of CCC's two models: sedan and compact. Students need to compile a predetermined overhead rate.

- **Handout #2-5:** Students evaluate CCC's proposed 1998 pricing for each model. Markup percentages based on various cost bases are computed and compared to industry averages.

- **Handout #2-6:** Students perform CCC's job-order costing for one month. The batches and flow of goods parallel those in the simulation. Students also prepare a cost-of-goods-manufactured and sold schedule for CCC.

- **Handout #2-7:** Students evaluate performance for one month in 1998 at CCC. They construct a flexible budget and analyze the results.

- **Handout #3-1:** Students once again estimate manufacturing costs for 1998 (as they did in Handout #2-4); however now they use activity-based costing. Projected costs per model under traditional and ABC are compared and causes for the differences are explored. Students discover that CCC's main problems are poor quality and high setup costs.

- **Handouts #3-2 & #3-3:** Total quality management concepts are introduced, but in the context of the students' educational experience rather than at CCC. This is done to 1) enhance the relevancy of rather abstract material; and to 2) give students a break from CCC.

- **Handout #3-4:** This handout prepares students for the second in-class LEGO® simulation where they assemble cars in a JIT plant layout.

- **Handout #3-5:** Students cost products in CCC's new JIT plant layout. The JIT work cells now use process, rather than job-order, costing. Differences between traditional and JIT costing techniques and cost structure are explored.

- **Handout #4-1:** Students prepare a 1999 budgeted income statement for CCC. The assignment requires students to estimate 1999 sales by trading-off selling price, level of advertising expenditures and volume of sales. The cost information and behavior are much more detailed than in Handout #2-4. JIT work cell concepts and costs from Handout #3-5 are integrated into the assignment.

- **Handout #4-2:** Students complete the comprehensive 1999 budget begun in Handout #4-1. They prepare a budgeted balance sheet, statement of cash flows and nonfinancial measures. Students are required to use their linked financial model to answer "what if" questions. Students also address an ethical situation at CCC as Group Assignment #4-2.

- **Handout #4-3:** Students evaluate CCC's performance for the first nine months of 1999. They prepare a flexible budget for both cost and non-cost measures of performance. Then, using their flexible budget and non-quantitative performance information for 1999, students prepare a report to evaluate performance from either a management or worker perspective. In Group Assignment #4-3 groups of students representing management and groups of students representing workers negotiate CCC's standards for the year 2000.

- **Handout #5-3:** Students perform a financial analysis of Caterpillar's annual reports distributed to them in class.

- **Handout #5-4:** Students perform a financial analysis of CCC. Students are required to compare CCC's financial performance with Caterpillar's. Finally, based on this financial analysis only, students are asked to estimate CCC's stock price.

Table A.1
Pretest Attitudes Survey: Means and Comparisons
Accounting 15

The following variables were measured on this scale	Strongly Disagree 1	Disagree 2	Neutral 3	Agree 4	Strongly Agree 5	

Variable Description	Fall 1992	Spring 1993	Fall 1993	Spring 1994	Fall 1994	Spring 1995	Contrast Effect**
1. I expect accounting 15 to be boring.	2.91	2.92	2.73	2.55	2.64	2.73	*
2. I expect accounting 15 to be challenging.	4.07	4.19	4.23	4.19	4.03	4.23	-
3. I expect accounting 15 to be interesting.	2.91	3.07	3.12	3.39	3.39	3.34	*
4. I expect accounting 15 to be easy.	1.98	2.02	1.99	1.97	2.03	1.86	-
5. I expect accounting 15 to be math oriented.	3.38	3.50	3.60	3.70	3.80	3.83	*
6. I expect accounting 15 to be time consuming.	4.09	4.20	4.15	4.15	4.05	4.30	-
7. I expect accounting 15 to require lots of memorization.	3.27	3.46	3.31	3.22	3.30	3.28	-
8. I find it easier to learn in classes that emphasize group discussion methods, as opposed to classes that emphasize lecturing.	3.60	2.82	2.62	3.48	3.66	3.47	-
9. I find that grading based on group performance accurately reflects my individual performance.	nm	3.64	3.58	2.41	2.52	2.38	nm
10. Group exercises are an effective way to learn technical material.[1]	nm	3.71	3.68	3.55	3.64	3.54	nm
11. Group presentations are an effective use of class time.[1]	2.99	2.93	3.03	3.02	3.30	3.12	*

Variable Description	Fall 1992	Spring 1993	Fall 1993	Spring 1994	Fall 1994	Spring 1995	Contrast Effect
12. I enjoy working in groups.[1]	3.54	3.52	3.48	3.52	3.59	3.55	-
13. I am a good oral communicator in a group setting.[1]	3.21	3.22	3.33	3.23	3.34	3.29	-
14. I am capable of getting work done in groups.[1]	3.98	3.76	3.89	4.05	3.96	4.00	*
15. Learning how to work with others should be an important objective of Accounting 15.[1]	3.43	3.58	3.66	3.52	3.67	3.59	*
16. Explaining material in writing should be an important objective of Accounting 15.[2]	3.30	3.34	3.37	3.46	3.44	3.31	-
17. I am an effective writer.[2]	3.11	3.56	3.64	3.57	3.53	3.64	*
18. I find writing to be enjoyable.[2]	2.64	3.14	3.23	3.14	3.03	3.10	*
19. Essay questions are an effective way to evaluate how much I know.	3.16	3.20	3.29	3.23	3.21	3.23	-
20. I perform better on multiple-choice exams than on exams that require writing.	nm	3.33	3.26	3.27	3.28	3.36	nm
21. Writing assignments are an important way to learn.[2]	3.37	3.57	3.60	3.44	3.43	3.38	-
22. I find feedback on preliminary drafts useful in improving my final writing projects.	4.18	4.17	4.15	4.30	4.23	5.25	-
23. I am a competent computer user.[3]	3.09	3.08	3.11	3.20	3.26	3.39	*
24. Learning how to use computers to aid in financial analysis should be an important objective of Accounting 15.[3]	4.09	4.03	4.10	4.24	4.23	4.26	*

Variable Description	Fall 1992	Spring 1993	Fall 1993	Spring 1994	Fall 1994	Spring 1995	Contrast Effect
25. I enjoy using computers.[3]	3.75	3.58	3.67	3.79	3.72	3.91	*
26. I believe that using computers is an effective way to learn about accounting and business.[3]	3.98	3.88	3.97	4.11	4.06	4.11	*

The following variables were measured on this scale	No Knowledge 1	2	Moderate Knowledge 3	4	Extensive Knowledge 5

Variable Description	Fall 1992	Spring 1993	Fall 1993	Spring 1994	Fall 1994	Spring 1995	Contrast Effect
27. My level of knowledge regarding computer word processing is best described as:	3.11	2.97	3.05	3.18	3.14	3.27	*
28. My level of knowledge regarding computer spreadsheets is best described as:	2.05	2.08	2.05	2.26	2.32	2.37	*
29. My level of knowledge regarding computer data base management is best described as:	1.82	1.74	1.68	2.06	2.07	2.06	*
30. My level of knowledge regarding computer graphic presentations of quantitative data is best described as:	1.66	1.57	1.55	1.88	1.91	1.93	*
31. My level of knowledge regarding use of computers in library research is best described as:	3.16	2.92	2.97	3.05	3.06	3.08	-

The following variables were measured on this scale	No Job Experience 1	2	Moderate Job Experience 3	4	Extensive Job Experience 5		
Variable Description	**Fall 1992**	**Spring 1993**	**Fall 1993**	**Spring 1994**	**Fall 1994**	**Spring 1995**	**Contrast Effect**
32. My level of job experience regarding the use of computer word processing is best described as:	nm	1.79	1.81	2.16	2.12	2.15	nm
33. My level of job experience regarding the use of computer spreadsheets is best described as:	nm	1.44	1.45	1.60	1.68	1.61	nm
34. My level of job experience regarding the use of computer data base management is best described as:	nm	1.33	1.33	1.69	1.58	1.59	nm
35. My level of job experience regarding the use of computer graphic presentation of quantitative data is best described as:	nm	1.27	1.20	1.50	1.43	1.44	nm
36. My level of job experience regarding the use of computer in library research is best described as:	nm	1.54	1.55	1.81	1.85	1.80	nm

The following variables were measured on this scale	No Interest 1	2	Moderate Interest 3	4	Extreme Interest 5		
Variable Description	**Fall 1992**	**Spring 1993**	**Fall 1993**	**Spring 1994**	**Fall 1994**	**Spring 1995**	**Contrast Effect**
37. My level of interest in pursuing accounting as a career is best described as:	2.24	2.22	2.36	2.37	2.34	2.36	*

The following variables were measured on this scale	Not Useful 1	2	Moderately Useful 3	4	Extremely Useful 5	

Variable Description	Fall 1992	Spring 1993	Fall 1993	Spring 1994	Fall 1994	Spring 1995	Contrast Effect
38. In my chosen career, I believe that accounting knowledge will be:	nm	3.64	3.87	3.89	3.92	3.89	nm

The following composite variables were measured on this scale	Strongly Disagree 1	Disagree 2	Neutral 3	Agree 4	Strongly Agree 5	

Variable Description	Fall 1992	Spring 1993	Fall 1993	Spring 1994	Fall 1994	Spring 1995	Contrast Effect
39. Groups[1]	nm	3.40	3.42	3.35	3.46	3.37	nm
40. Writing[2]	3.12	3.35	3.42	3.37	3.33	3.33	*
41. Computer[3]	3.77	3.65	3.74	3.83	3.82	3.92	*

Notes:

1 Variables with the superscript "1" were included in the "Groups" composit measure
2 Variables with the superscript "2" were included in the "Writing" composit measure
3 Variables with the superscript "3" were included in the "Computer" composit measure

** The contrast effect is based on an orthogonal coefficient matrix comparing the means from (Fall 1992 + Spring 1993) to (Fall 1993 + Spring 1994 + Fall 1994 + Spring 1995). A n "*" indicates that the test is significant at the .05 level using a separate variance based contrast test. (Note that new materials for AC 15 were first introduced in Spring 1993.)

nm = not measured

Table A.2
Posttest Attitudes Survey: Means and Comparisons
Accounting 15

The following variables were measured on this scale	Strongly Disagree 1	Disagree 2	Neutral 3	Agree 4	Strongly Agree 5	

Variable Description	Fall 1992	Spring 1993	Fall 1993	Spring 1994	Fall 1994	Spring 1995	Contrast Effect**
1. I found accounting 15 to be boring.	3.13	2.70	2.67	2.68	2.45	2.86	*
2. I found accounting 15 to be challenging.	2.91	4.18	3.99	4.07	4.14	4.14	*
3. I found accounting 15 to be interesting.	2.92	2.94	3.29	3.27	3.40	3.22	*
4. I found accounting 15 to be easy.	2.95	1.87	2.17	2.20	2.01	1.96	*
5. I found accounting 15 to be math oriented.	3.33	2.81	3.13	3.23	3.10	3.43	*
6. I found accounting 15 to be time consuming.	3.05	4.40	4.19	4.13	4.37	4.43	*
7. I found accounting 15 to require lots of memorization.	3.00	3.32	3.21	3.20	3.33	3.40	*
8. As a result of my Accounting 15 class, I find it easier to learn in classes that emphasize group discussion methods, as opposed to classes that emphasize lecturing.	2.90	2.84	2.83	2.90	3.02	2.95	-
9. As a result of my Accounting 15 class, I find that grading based on group performance accurately reflects my individual performance.	2.97	3.64	2.51	2.66	2.67	2.75	-
10. Group exercises were an effective way to learn technical material in Accounting 15.[1]	2.80	3.39	3.29	3.25	3.53	3.46	*
11. Group presentations were an effective use of class time in Accounting 15.[1]	2.90	2.78	2.69	2.91	3.42	3.20	-

Variable Description	Fall 1992	Spring 1993	Fall 1993	Spring 1994	Fall 1994	Spring 1995	Contrast Effect
12. I enjoy working in groups in Accounting 15.[1]	2.80	3.42	3.40	3.65	3.71	3.64	*
13. As a result of Accounting 15, I am a better oral communicator in a group setting.[1]	2.83	3.49	2.67	2.70	2.93	2.90	-
14. As a result of Accounting 15, I am more capable of getting work done in groups.[1]	2.56	3.80	2.94	2.89	3.14	3.07	*
15. Learning how to work with others should be an important objective of Accounting 15.[1]	2.92	3.30	3.37	3.43	3.67	3.54	*
16. Explaining material in writing should be an important objective of Accounting 15.[2]	2.89	3.33	3.60	3.43	3.69	3.64	*
17. As a result of Accounting 15, I am a more effective writer.[2]	2.75	3.67	2.23	2.28	2.39	2.39	*
18. As a result of Accounting 15, I find writing to be more enjoyable.[2]	2.90	3.22	1.99	2.10	2.14	2.14	*
19. In Accounting 15 essay questions were an effective way to evaluate how much I knew.	2.81	3.17	2.91	2.82	3.07	2.92	*
20. I perform better on multiple-choice exams than on exams that require writing.	2.98	3.18	3.10	3.17	3.22	3.24	*
21. In Accounting 15, writing assignments were an important way to learn.[2]	2.55	3.48	3.25	3.05	3.30	3.19	*
22. I find feedback on preliminary drafts useful in improving my final writing projects.	2.84	3.89	3.90	3.89	4.00	3.77	*
23. As a result of Accounting 15, I am a more competent computer user.[3]	2.79	3.40	3.14	3.71	4.00	4.10	*
24. Learning how to use computers to aid in financial analysis should be an important objective of Accounting 15.[3]	2.89	3.88	4.10	4.25	4.41	4.37	*

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Variable Description	Fall 1992	Spring 1993	Fall 1993	Spring 1994	Fall 1994	Spring 1995	Contrast Effect
25. I enjoyed using computers in my Accounting 15 class.[3]	2.65	3.46	3.16	3.53	3.89	3.83	*
26. As a result of taking Accounting 15, I believe that using computers is an effective way to learn about accounting and business.[3]	2.78	3.66	3.68	4.00	4.21	4.20	*

The following variables were measured on this scale	No Knowledge 1	2	Moderate Knowledge 3	4	Extensive Knowledge 5

Variable Description	Fall 1992	Spring 1993	Fall 1993	Spring 1994	Fall 1994	Spring 1995	Contrast Effect
27. As a result of taking Accounting 15, my level of knowledge regarding computer word processing is best described as:	3.07	3.42	2.71	3.22	3.44	3.45	*
28. As a result of taking Accounting 15, my level of knowledge regarding computer spreadsheets is best described as:	2.29	3.05	3.10	3.56	3.79	3.82	*
29. As a result of taking Accounting 15, my level of knowledge regarding computer data base management is best described as:	1.89	1.98	2.06	2.35	2.36	2.61	*
30. As a result of taking Accounting 15, my level of knowledge regarding computer graphic presentations of quantitative data is best described as:	1.79	2.07	1.89	2.21	2.36	2.32	*
31. As a result of taking Accounting 15, my level of knowledge regarding use of computers in library research is best described as:	3.04	3.30	2.44	2.72	2.71	2.49	*

The following variables were measured on this scale	No Job Experience 1	2	Moderate Job Experience 3	4	Extensive Job Experience 5	

Variable Description	Fall 1992	Spring 1993	Fall 1993	Spring 1994	Fall 1994	Spring 1995	Contrast Effect
32. My level of job experience regarding the use of computer word processing is best described as:	1.86	2.01	2.30	2.60	2.48	2.61	*
33. My level of job experience regarding the use of computer spreadsheets is best described as:	1.51	1.67	1.98	2.25	1.98	2.21	*
34. My level of job experience regarding the use of computer data base management is best described as:	1.38	1.50	1.81	2.07	1.88	2.00	*
35. My level of job experience regarding the use of computer graphic presentation of quantitative data is best described as:	1.30	1.34	1.61	1.78	1.59	1.83	*
36. My level of job experience regarding the use of computer in library research is best described as:	1.65	1.60	1.88	2.08	1.84	2.03	*

The following variables were measured on this scale	No Interest 1	2	Moderate Interest 3	4	Extreme Interest 5	

Variable Description	Fall 1992	Spring 1993	Fall 1993	Spring 1994	Fall 1994	Spring 1995	Contrast Effect
37. As a result of taking Accounting 15, my level of interest in pursuing accounting as a career is best described as:	2.04	1.98	2.17	2.22	2.24	2.20	-

The following variables were measured on this scale	Not Useful 1	2	Moderately Useful 3	4	Extremely Useful 5

Variable Description	Fall 1992	Spring 1993	Fall 1993	Spring 1994	Fall 1994	Spring 1995	Contrast Effect
38. In my chosen career, I believe that accounting knowledge will be:	3.53	3.50	3.79	3.63	3.83	3.60	*

The following composite variables were measured on this scale	Strongly Disagree 1	Disagree 2	Neutral 3	Agree 4	Strongly Agree 5

Variable Description	Fall 1992	Spring 1993	Fall 1993	Spring 1994	Fall 1994	Spring 1995	Contrast Effect
39. Groups[1]	2.84	3.33	2.96	3.05	3.26	3.19	*
40. Writing[2]	2.78	3.37	2.79	2.73	2.92	2.86	*
41. Computer[3]	2.77	3.59	3.53	3.87	4.13	4.13	*

Notes:

1 Variables with the superscript "1" were included in the "Groups" composit measure.
2 Variables with the superscript "2" were included in the "Writing" composit measure
3 Variables with the superscript "3" were included in the "Computer" composit measure

** The contrast effect is based on an orthogonal coefficient matrix comparing the means from (Fall 1992) to (Spring 1993 + Fall 1993 + Spring 1994 + Fall 1994 + Spring 1995). A n "*" indicates that the test is significant at the .05 level using a separate variance based contrast test. (Note that new materials for AC 15 were first introduced in Spring 1993.)

nm = not measured

Table A.3
Pretest Attitudes Survey: Means and Comparisons
Accounting 16

The following variables were measured on this scale	Strongly Disagree 1	Disagree 2	Neutral 3	Agree 4	Strongly Agree 5

Variable Description	Fall 1992	Spring 1993	Fall 1993	Spring 1994	Fall 1994	Spring 1995	Contrast Effect**
1. I expect accounting 16 to be boring.	3.07	3.09	2.66	2.50	2.75	2.63	*
2. I expect accounting 16 to be challenging.	4.11	4.06	4.29	4.20	4.12	4.10	-
3. I expect accounting 16 to be interesting.	2.70	2.92	3.16	3.38	3.21	3.31	*
4. I expect accounting 16 to be easy.	1.80	2.21	1.75	1.80	2.03	1.90	-
5. I expect accounting 16 to be math oriented.	3.07	3.19	3.07	3.40	3.50	3.33	*
6. I expect accounting 16 to be time consuming.	4.20	3.96	4.32	4.37	4.33	4.21	*
7. I expect accounting 16 to require lots of memorization.	3.31	3.32	3.41	3.39	3.34	3.27	-
8. I find it easier to learn in classes that emphasize group discussion methods, as opposed to classes that emphasize lecturing.	3.59	2.84	2.69	3.35	3.48	3.52	*
9. I find that grading based on group performance accurately reflects my individual performance.	nm	3.56	3.47	2.41	2.59	2.52	nm
10. Group exercises are an effective way to learn technical material.[1]	nm	3.56	3.68	3.36	3.50	3.46	nm
11. Group presentations are an effective use of class time.[1]	2.72	2.92	2.98	21.84	3.00	3.08	-

Variable Description	Fall 1992	Spring 1993	Fall 1993	Spring 1994	Fall 1994	Spring 1995	Contrast Effect
12. I enjoy working in groups.[1]	3.55	3.58	3.67	3.41	3.54	3.62	-
13. I am a good oral communicator in a group setting.[1]	3.31	3.50	3.44	3.43	3.35	3.62	-
14. I am capable of getting work done in groups.[1]	3.92	3.91	3.88	3.97	3.96	4.05	*
15. Learning how to work with others should be an important objective of Accounting 16.[1]	3.45	3.59	3.68	3.49	3.55	3.64	-
16. Explaining material in writing should be an important objective of Accounting 16.[2]	3.32	3.25	3.41	3.46	3.43	3.45	*
17. I am an effective writer.[2]	3.24	3.61	3.59	3.75	3.56	3.59	*
18. I find writing to be enjoyable.[2]	2.64	3.22	3.15	3.19	3.10	3.09	*
19. Essay questions are an effective way to evaluate how much I knew.	3.14	3.37	3.29	3.33	3.26	3.18	-
20. I perform better on multiple-choice exams than on exams that require writing.	nm	3.18	3.15	3.11	3.19	3.24	nm
21. Writing assignments are an important way to learn.[2]	3.33	3.52	3.53	3.48	3.37	3.37	-
22. I find feedback on preliminary drafts useful in improving my final writing projects.	4.14	4.00	4.14	4.27	4.08	4.09	_
23. I am a competent computer user.[3]	3.33	3.22	3.32	3.52	3.47	3.76	*
24. Learning how to use computers to aid in financial analysis should be an important objective of Accounting 16.[3]	4.05	3.92	4.00	4.09	4.07	4.19	*

Variable Description	Fall 1992	Spring 1993	Fall 1993	Spring 1994	Fall 1994	Spring 1995	Contrast Effect
25. I enjoy using computers. [3]	3.79	3.76	3.65	3.87	3.72	3.87	-
26. I believe that using computers is an effective way to learn about accounting and business. [3]	3.99	3.89	3.91	4.01	4.04	4.09	*

The following variables were measured on this scale	No Knowledge 1	2	Moderate Knowledge 3	4	Extensive Knowledge 5

Variable Description	Fall 1992	Spring 1993	Fall 1993	Spring 1994	Fall 1994	Spring 1995	Contrast Effect
27. My level of knowledge regarding computer word processing is best described as:	3.40	3.19	3.19	3.44	3.54	3.61	*
28. My level of knowledge regarding computer spreadsheets is best described as:	2.43	2.42	2.66	2.95	3.18	3.37	*
29. My level of knowledge regarding computer data base management is best described as:	2.10	2.10	1.92	2.31	2.53	2.56	*
30. My level of knowledge regarding computer graphic presentations of quantitative data is best described as:	1.94	1.90	1.83	2.08	2.31	2.30	*
31. My level of knowledge regarding use of computers in library research is best described as:	3.23	3.10	2.95	3.18	3.27	3.20	*

The following variables were measured on this scale	No Job Experience 1	2	Moderate Job Experience 3	4	Extensive Job Experience 5		
Variable Description	**Fall 1992**	**Spring 1993**	**Fall 1993**	**Spring 1994**	**Fall 1994**	**Spring 1995**	**Contrast Effect**
32. My level of job experience regarding the use of computer word processing is best described as:	nm	1.95	1.96	2.12	2.52	2.40	nm
33. My level of job experience regarding the use of computer spreadsheets is best described as:	nm	1.55	1.59	1.71	2.02	2.04	nm
34. My level of job experience regarding the use of computer data base management is best described as:	nm	1.52	1.44	1.53	1.99	1.85	nm
35. My level of job experience regarding the use of computer graphic presentation of quantitative data is best described as:	nm	1.41	1.29	1.38	1.69	1.63	nm
36. My level of job experience regarding the use of computer in library research is best described as:	nm	1.59	1.49	1.63	1.89	1.88	nm

The following variables were measured on this scale	No Interest 1	2	Moderate Interest 3	4	Extreme Interest 5		
Variable Description	**Fall 1992**	**Spring 1993**	**Fall 1993**	**Spring 1994**	**Fall 1994**	**Spring 1995**	**Contrast Effect**
37. My level of interest in pursuing accounting as a career is best described as:	2.07	2.05	2.16	2.22	2.23	2.28	*

The following variables were measured on this scale	Not Useful 1	2	Moderately Useful 3	4	Extremely Useful 5

Variable Description	Fall 1992	Spring 1993	Fall 1993	Spring 1994	Fall 1994	Spring 1995	Contrast Effect
38. In my chosen career, I believe that accounting knowledge will be:	nm	3.52	3.67	3.89	3.74	3.76	nm

The following composite variables were measured on this scale	Strongly Disagree 1	Disagree 2	Neutral 3	Agree 4	Strongly Agree 5

Variable Description	Fall 1992	Spring 1993	Fall 1993	Spring 1994	Fall 1994	Spring 1995	Contrast Effect
39. Groups[1]	nm	3.44	3.43	3.28	3.37	3.44	nm
40. Writing[2]	3.16	3.39	3.40	3.44	3.34	3.34	-
41. Computer[3]	3.83	3.72	3.73	3.87	3.82	3.98	*

Notes:

1 Variables with the superscript "1" were included in the "Groups" composit measure
2 Variables with the superscript "2" were included in the "Writing" composit measure
3 Variables with the superscript "3" were included in the "Computer" composit measure

** The contrast effect is based on an orthogonal coefficient matrix comparing the means from (Fall 1992 + Spring 1993 + Fall 1993) to (Spring 1994 + Fall 1994 + Spring 1995). A n "*" indicates that the test is significant at the .05 level using a separate variance based contrast test. (Note that new materials for AC 16 were first introduced in Fall 1993.)

nm = not measured

Table A.4
Posttest Attitudes Survey: Means and Comparisons
Accounting 16

The following variables were measured on this scale	Strongly Disagree 1	Disagree 2	Neutral 3	Agree 4	Strongly Agree 5

Variable Description	Fall 1992	Spring 1993	Fall 1993	Spring 1994	Fall 1994	Spring 1995	Contrast Effect
1. I found accounting 16 to be boring.	3.17	2.71	2.29	2.70	2.63	2.83	*
2. I found accounting 16 to be challenging.	2.75	3.89	4.02	3.74	3.88	4.09	*
3. I found accounting 16 to be interesting.	2.97	2.95	3.45	3.13	3.28	3.10	*
4. I found accounting 16 to be easy.	2.99	2.26	1.96	2.03	2.07	1.78	*
5. I found accounting 16 to be math oriented.	3.25	2.86	2.94	3.09	3.23	3.18	-
6. I found accounting 16 to be time consuming.	2.78	3.54	4.27	4.25	4.25	4.53	*
7. I found accounting 16 to require lots of memorization.	2.90	3.13	2.97	3.24	3.23	3.47	*
8. As a result of my Accounting 16 class, I find it easier to learn in classes that emphasize group discussion methods, as opposed to classes that emphasize lecturing.	2.90	2.68	3.24	3.13	3.16	2.87	*
9. As a result of my Accounting 16 class, I find that grading based on group performance accurately reflects my individual performance.	2.96	3.28	2.72	2.77	2.89	2.66	*
10. Group exercises were an effective way to learn technical material in Accounting 16.[1]	2.63	3.48	3.52	3.28	3.41	3.34	*
11. Group presentations were an effective use of class time in Accounting 16.[1]	2.85	2.88	2.97	2.98	3.02	2.80	-

	Variable Description	Fall 1992	Spring 1993	Fall 1993	Spring 1994	Fall 1994	Spring 1995	Contrast Effect
12.	I enjoy working in groups in Accounting 16.[1]	2.69	3.49	3.85	3.61	3.72	3.87	*
13.	As a result of Accounting 16, I am a better oral communicator in a group setting.[1]	2.79	3.42	3.22	3.04	3.08	2.99	-
14.	As a result of Accounting 16, I am more capable of getting work done in groups.[1]	2.51	3.81	3.38	3.18	3.17	3.10	-
15.	Learning how to work with others should be an important objective of Accounting 16.[1]	2.89	3.23	3.67	3.49	3.75	3.61	*
16.	Explaining material in writing should be an important objective of Accounting 16.[2]	2.86	3.04	3.55	3.57	3.72	3.58	*
17.	As a result of Accounting 16, I am a more effective writer.[2]	2.74	3.45	2.49	2.58	2.68	2.45	*
18.	As a result of Accounting 16, I find writing to be more enjoyable.[2]	2.89	3.17	2.29	2.37	2.37	2.09	*
19.	In Accounting 16 essay questions were an effective way to evaluate how much I knew.	2.67	3.24	3.23	3.22	3.29	2.89	*
20.	I perform better on multiple-choice exams than on exams that require writing.	2.96	3.05	2.80	3.07	3.07	3.28	-
21.	In Accounting 16, writing assignments were an important way to learn.[2]	2.62	3.50	3.25	3.34	3.39	2.98	*
22.	I find feedback on preliminary drafts useful in improving my final writing projects.	2.97	3.85	3.92	3.80	3.80	3.74	*
23.	As a result of Accounting 16, I am a more competent computer user.[3]	2.97	3.39	3.53	3.85	3.87	4.01	*
24.	Learning how to use computers to aid in financial analysis should be an important objective of Accounting 16.[3]	2.90	3.76	4.29	4.27	4.39	4.31	*

Variable Description	Fall 1992	Spring 1993	Fall 1993	Spring 1994	Fall 1994	Spring 1995	Contrast Effect
25. I enjoyed using computers in my Accounting 16 class.[3]	2.81	3.62	3.74	3.75	3.90	3.85	*
26. As a result of taking Accounting 16, I believe that using computers is an effective way to learn about accounting and business.[3]	2.79	3.83	4.02	4.00	4.15	4.17	*

The following variables were measured on this scale	No Knowledge 1	2	Moderate Knowledge 3	4	Extensive Knowledge 5

Variable Description	Fall 1992	Spring 1993	Fall 1993	Spring 1994	Fall 1994	Spring 1995	Contrast Effect
27. As a result of taking Accounting 16, my level of knowledge regarding computer word processing is best described as:	3.24	3.38	3.22	3.45	3.47	3.41	-
28. As a result of taking Accounting 16, my level of knowledge regarding computer spreadsheets is best described as:	2.60	2.67	3.42	3.68	3.76	3.88	*
29. As a result of taking Accounting 16, my level of knowledge regarding computer data base management is best described as:	2.19	2.35	2.31	2.29	2.47	2.10	-
30. As a result of taking Accounting 16, my level of knowledge regarding computer graphic presentations of quantitative data is best described as:	2.11	2.08	2.30	2.18	2.44	2.43	*
31. As a result of taking Accounting 16, my level of knowledge regarding use of computers in library research is best described as:	3.23	3.20	2.41	2.18	2.55	2.06	*

The following variables were measured on this scale	No Job Experience 1	2	Moderate Job Experience 3	4	Extensive Job Experience 5	

Variable Description	Fall 1992	Spring 1993	Fall 1993	Spring 1994	Fall 1994	Spring 1995	Contrast Effect
32. My level of job experience regarding the use of computer word processing is best described as:	2.11	1.97	2.53	2.46	2.88	2.66	*
33. My level of job experience regarding the use of computer spreadsheets is best described as:	1.70	1.55	2.04	2.14	2.45	2.34	*
34. My level of job experience regarding the use of computer data base management is best described as:	1.57	1.49	1.94	2.00	2.37	1.91	*
35. My level of job experience regarding the use of computer graphic presentation of quantitative data is best described as:	1.48	1.29	1.68	1.76	2.09	1.76	*
36. My level of job experience regarding the use of computer in library research is best described as:	1.73	1.53	1.80	1.79	2.05	1.76	*

The following variables were measured on this scale	No Interest 1	2	Moderate Interest 3	4	Extreme Interest 5	

Variable Description	Fall 1992	Spring 1993	Fall 1993	Spring 1994	Fall 1994	Spring 1995	Contrast Effect
37. As a result of taking Accounting 16, my level of interest in pursuing accounting as a career is best described as:	2.04	2.03	2.13	2.04	2.22	1.83	-

The following variables were measured on this scale	Not Useful 1	2	Moderately Useful 3	4	Extremely Useful 5

	Variable Description	Fall 1992	Spring 1993	Fall 1993	Spring 1994	Fall 1994	Spring 1995	Contrast Effect
38.	In my chosen career, I believe that accounting knowledge will be:	3.53	3.52	3.87	3.78	3.77	3.57	*

The following composite variables were measured on this scale	Strongly Disagree 1	Disagree 2	Neutral 3	Agree 4	Strongly Agree 5

	Variable Description	Fall 1992	Spring 1993	Fall 1993	Spring 1994	Fall 1994	Spring 1995	Contrast Effect
39.	Groups[1]	2.76	3.29	3.32	3.18	3.29	3.14	*
40.	Writing[2]	2.75	3.27	2.96	3.02	3.09	2.80	-
41.	Computer[3]	2.87	3.66	3.90	3.96	4.08	4.09	*

Notes:

1 Variables with the superscript "1" were included in the "Groups" composit measure
2 Variables with the superscript "2" were included in the "Writing" composit measure
3 Variables with the superscript "3" were included in the "Computer" composit measure

** The contrast effect is based on an orthogonal coefficient matrix comparing the means from (Fall 1992 + Spring 1993) to (Fall 1993 + Spring 1994 + Fall 1994 + Spring 1995). A n "*" indicates that the test is significant at the .05 level using a separate variance based contrast test. (Note that new materials for AC 16 were first introduced in Fall 1993.)

nm = not measured

Table A.5
Final Exam Scores: Means and Standard Deviations for Individual Questions and Total Scores
Accounting 15

	Variable Description	Fall 1992	Spring 1993	Fall 1993	Spring 1994	Fall 1994	Spring 1995
1.	Question #1 - Mean	nm	8.73	6.34	8.21	8.54	7.12
	- SD	nm	1.72	2.02	1.74	1.56	2.01
2.	Question #2 - Mean	nm	15.67	14.40	13.35	16.33	17.83
	- SD	nm	8.93	8.39	8.38	8.15	8.80
3.	Question #3 - Mean	nm	24.01	24.41	24.95	25.77	30.09
	- SD	nm	7.35	8.31	8.93	9.72	7.52
4.	Question #4 - Mean	nm	25.91	27.60	22.90	20.60	19.87
	- SD	nm	6.19	4.25	7.54	6.04	8.09
5.	Question #5 - Mean	nm	22.60	5.98	16.63	13.91	14.76
	- SD	nm	6.24	5.94	5.89	5.82	7.67
6.	Question #6 - Mean	nm	14.56	13.40	17.85	15.05	16.94
	- SD	nm	6.65	7.72	7.52	7.37	5.01
7.	Question #7 - Mean	nm	11.21	14.51	15.36	13.61	14.73
	- SD	nm	8.25	7.27	9.02	8.98	7.60
8.	Total - Mean	nm	122.63	107.11	119.18	113.52	121.37
	-SD	nm	31.57	31.08	33.71	34.8	34.22

Key:

nm = not measured

Table A.6
Final Exam Scores: Means and Standard Deviations for Individual Questions and Total Scores
Accounting 16

	Variable Description	Fall 1992	Spring 1993	Fall 1993	Spring 1994	Fall 1994	Spring 1995
1.	Question #1 - Mean	nm	nm	20.61	20.03	19.06	20.48
	- SD	nm	nm	3.3	5.42	4.23	4.03
2.	Question #2 - Mean	nm	nm	12.27	13.33	12.46	10.16
	- SD	nm	nm	4.78	7.36	5.93	8.46
3.	Question #3 - Mean	nm	nm	13.53	12.23	13.80	10.17
	- SD	nm	nm	3.25	4.22	4.11	3.79
4.	Question #4 - Mean	nm	nm	19.44	16.94	16.94	15.57
	- SD	nm	nm	4.85	4.71	4.21	5.29
5.	Question #5 - Mean	nm	nm	14.80	15.12	12.53	9.66
	- SD	nm	nm	5.43	4.03	4.26	4.51
6.	Question #6 - Mean	nm	nm	14.08	11.24	13.16	11.34
	- SD	nm	nm	5.40	4.73	4.37	5.99
7.	Question #7 - Mean	nm	nm	18.78	23.58	23.66	25.62
	- SD	nm	nm	5.48	8.74	8.09	6.99
8.	Question #8 - Mean	nm	nm	25.22	23.08	4.62	8.61
	-SD	nm	nm	6.91	8.43	2.74	3.32
9.	Question #9 - Mean	nm	nm	-	-	7.64	9.44
	- SD	nm	nm	-	-	3.95	5.46
10.	Total - Mean	nm	nm	138.74	135.94	123.75	121.06
	- SD	nm	nm	21.94	34.80	26.45	26.21

Key:

nm = not measured

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*EXAM #*_____

NAME _____

SS # _____

SECTION # _____

CALIFORNIA STATE UNIVERSITY, CHICO

ACCOUNTING 15

INTRODUCTORY ACCOUNTING - I

SPRING, 1995

FINAL EXAM

110 MINUTES

200 POINTS

INSTRUCTIONS: Count the pages of this exam (13 pages). Transfer the EXAM # shown at the top of this page to all successive pages. Show all computations on the examination pages. **Correct numerical answers that are not supported by computations will receive no credit.**

Summary of Grading:

Question #1	(10)	_____
Question #2	(30)	_____
Question #3	(40)	_____
Question #4	(30)	_____
Question #5	(32)	_____
Question #6	(28)	_____
Question #7	(30)	_____
Total Points	(200)	_____

100

EXAM #_____

1. **(10 Points)** Below is a list of terms from Modules Two and Three. Following this list are ten definitions. Fill in the blank next to each definition, with the letter corresponding to the correct term.

A.	Accounts Receivable Turnover	K.	Internal Rate of Return
B.	Aging of Accounts Receivable	L.	LIFO
C.	Break Even Point	M.	Mortgage
D.	Contribution Margin	N.	Net Present Value
E.	Cost of Capital	O.	Present Value
F.	Cost of Goods Sold	P.	Return on Investment
G.	Depreciation Expense	Q.	Static (Planning) Budget
H.	FIFO	R.	Target Income
I.	Fixed Costs	S.	Unlimited Liability
J.	Flexible (Performance) Budget	T.	Useful Life

1. _____ An inventory cost flow method which assumes that ending inventory consists of the most recently purchased goods.

2. _____ The portion of sales revenue available to cover fixed expenses and to provide a profit.

3. _____ The level of sales at which total expenses equal total revenues.

4. _____ A portion of the original cost of plant and equipment that is assigned to a period benefited.

5. _____ The current dollar value of money to be received or paid at some future date, given a specific interest rate.

6. _____ A measure of operating performance and efficiency in utilizing assets.

7. _____ Means that if business assets are not sufficient to settle creditor claims, the personal assets of the proprietor or the partner may be used to settle the claims.

8. _____ A quantified plan that projects costs for only one level of activity.

9. _____ The "true" discount rate that will produce a net present value of zero when applied to the cash flows of an investment.

10. _____ A written promise, secured by the pledging of collateral, to pay a stated amount of money at one or more specified future dates.

2. **(30 Points)** Rhent Jet, the Vet, has started a mobile veterinarian service in Chico. He owns a fully equipped van that he takes to the residence of the sick animal. Most visits will be routine and he will be alone in the van. On some days he will schedule surgical procedures and his wife will accompany him. Rhent has contributed $75,000 from his personal savings account to purchase and supply the van.

Rhent opted to start a sole proprietorship form of business organization for now, even though he had been approached by prospective investors in his business venture.

As part of his planning efforts, Rhent developed the following revenue and expense estimated for the first year of his company's planned operations.

Service Revenue (2,000 visits @ $40 each; 300 procedures @ $100 average revenue)	$110,000
Variable expenses:	
Medical and surgical supplies	20% of revenue
Billing Service	5% of revenue
Variable Truck expenses (gas, oil, tires, etc.)	4% of revenue
Fixed expenses per year:	
Depreciation on the van	$6,000
Advertising	$5,000
Taxes and insurance on the van	4,000
Professional liability insurance	8,000
Mixed expenses:	
Van maintenance	1% of revenue + $1,000/year

REQUIRED (Provide supporting computations):

A. **(7 Points)** What is the veterinarian service's expected contribution margin ratio?

B. **(7 Points)** What is the breakeven point in dollars?

(Question 2 Continued)

C. **(7 Points)** Suppose that Rhent and his wife need a minimum of $40,000 net income (before taxes) from Rhent Jet to support their lifestyle. What amount of revenue must the company earn to meet this goal?

D. **(9 Points)** Rhent must decide what form of business would best suit his needs for the veterinarian service. Identify two alternative forms he should consider. Discuss the advantages and disadvantages of each alternative, including tax and legal considerations.

3. **(40 Points)** Jim Johnson's, a financial consulting firm, began operations on January 1, 1995. The following transactions and events took place during the first month of operations:

   A. On January 1, Jim opened a business bank account by depositing $15,000 of his personal savings into First USA Bank.

   B. On January 1, Jim purchased a car to be used for business purposes. The car cost $4,000 and Jim took out a loan from First USA Bank for the entire amount. He signed a four year, 14% note payable which required that he pay monthly principal and interest payments of $120 due at the end of each month.

   C. Jim paid his insurance premium for the entire year. He paid $12,000 cash on Jan. 1.

   D. On January 10, Jim purchased office equipment costing $2,000. $1,000 was paid in cash and $1,000 was on credit.

   E. On January 22, Jim paid 50% of the balance due for the office equipment (purchased in d above).

   F. During the month, Jim performed services for clients earning $14,000. $2,000 of this was collected in cash and the remaining $12,000 was on credit.

   G. On January 31 Jim paid his first $120 monthly payment to First USA Bank which includes both interest and principal.

   H. Jim noted that he had used up one month of his insurance during January.

   I. Jim realized that he owes his assistant $1,300 for January wages. He will pay his assistant on February 5th.

   J. At the end of the month, Jim estimated that 1% of his total credit sales will not be collected.

   Required: In the transaction worksheet on the next page, record the above transactions in the various asset, liability and owner's equity columns. You DO NOT need to compute column totals. All negative amounts should be shown in brackets.

Jim Johnson's Worksheet
For the Month of January 1995

			Allow. for								
			Uncollectible								
		Accounts	(Doubtful)	Prepaid	Office		Accounts	Wages	Note	Contributed	Retained
	Cash	Receivable	Accounts	Insurance	Equipment	Auto	Payable	Payable	Payable	Capital	Earnings
Beg. Bal.	0	0	0	0	0	0	0	0	0	0	0
a)											
b)											
c)											
d)											
e)											
f)											
g)											
h)											
i)											
j)											

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4. **(30 Points)** C&C Corporation has developed the following planning (static) budget for 199X:

C&C Corporation
Planning Budget
For the year ended December 31, 199X

Revenue	$4,000,000
Variable Expenses	3,000,000
Contribution Margin	$1,000,000
Fixed Expenses	600,000
Income (before taxes)	$ 400,000

REQUIRED:

A. **(8 Points)** Assume that at the end of 199X, C&C Corp.'s actual revenue turned out to be $4,500,000. In the table provided below, indicate the amount of variable expenses and contribution margin that C&C should have incurred and earned, respectively, given the actual amount of revenue achieved in 199X. Show computations in the space below the table.

Revenue	$4,500,000
Variable Expenses	_____
Contribution Margin	$_____

B. (7 Points) Comparing the computed contribution margin in (a) above to the $1,000,000 contribution margin in the planning budget, what factor do you think caused this difference? Please explain.

(Question 4 Continued)

C. **(8 Points)** Assume that actual variable expenses in 199X turned out to be $3,200,000. The manager is unsure whether this is a "good" or "bad" result. Although he notices that the actual variable expense is more than C&C's original planning budget, he also recognizes that actual revenue was more than budgeted revenue. Briefly indicate to the manager whether the actual amount of variable expenses is a "good" or "bad" result and explain your answer.

D. **(5 Points)** Assume that C&C Corp.'s actual fixed expenses turned out to be $650,000 in 199X. Compute the amount of fixed expense performance variance. Be sure to indicate whether it is favorable (F) or unfavorable (U).

E. **(2 Points)** Give one example of a specific fixed expense that C&C Corp. could have incurred and explain how this expense might have been involved in producing the 199X variance computed in (d) above.

5. **(32 Points)** The two balance sheets and income statements of the Martin Corporation and Orient Co. shown on the next page are to be used in answering the following questions:

A. i). **(4 Points)** These two companies have similar allowances for uncollectible accounts even though their gross accounts receivable is significantly different. What was the gross account receivable for each company?

ii). **(8 Points)** Which of these two companies do you expect to collect a greater percentage of their respective accounts receivable? How did you reach your conclusion (show calculations)?

B. i). **(4 Points)** What was the original cost for Orient Co.'s and Martin Corporation's plant and equipment?

ii). **(6 Points)** Which company's Plant & Equipment is older, assuming both companies' plant and equipment have the same useful lives? How did you reach your conclusion (show calculations)?

C. i). **(5 Points)** Assuming both companies started at the same time (three years ago) and neither company has yet to pay a dividend, which company has probably been more profitable than the other?

ii). **(5 Points)** What accounts did you look at to make that determination?

ORIENT CO.
(Audited) Balance Sheet
As of December 31, 1994

Cash	$ 38,000.00	Account Payable		$ 65,000.00
Accounts Receivable (net of Allowance of $1,500)	30,000.00	Notes Payable (Short-term)		47,000.00
Inventory	34,000.00	Total Current Liabilities		$ 112,000.00
Total Current Assets	$ 102,000.00			
		Common Stock	$ 27,000.00	
Long-Term Investments	$ 182,000.00	Retained Earnings	150,000.00	
Plant & Equipment (net of Accum. Dep.. of $15,000)	$ 5,000.00	Total Stockholders' Equity		$ 177,000.00
TOTAL ASSETS	$ 289,000.00	**TOTAL LIABILITIES & STOCKHOLDERS' EQUITY**		$ 289,000.00

ORIENT CO.
(Audited) Income Statement
For the Year Ended December 31, 1994

Net Sales		350,000.00
Variable Expenses		135,000.00
Contribution Margin		215,000.00
Fixed Expenses		175,000.00
NET INCOME		40,000.00

MARTIN CORPORATION
(Audited) Balance Sheet
As of December 31, 1994

Cash	$ 38,000.00	Account Payable		$ 45,000.00
Short-Term Investments	84,000.00	Notes Payable (Short-Term)		78,000.00
Accounts Receivable (net of Allowance of $1,500)	78,000.00	Total Current Liabilities		$ 123,000.00
Inventory	62,000.00			
Total Current Assets	$ 262,000.00	Common Stock	$ 89,000.00	
		Retained Earnings	77,000.00	
Plant & Equipment (net of Accum. Dep.. of $3,000)	$ 27,000.00	Total Stockholders' Equity		$ 166,000.00
TOTAL ASSETS	$ 289,000.00	**TOTAL LIABILITIES & STOCKHOLDERS' EQUITY**		$ 289,000.00

MARTIN CORPORATION
(Audited) Income Statement
For the Year Ended December 31, 1994

Net Sales		$ 350,000.00
Variable Expenses		285,000.00
Contribution Margin		$ 65,000.00
Fixed Expenses		$ 40,000.00
NET INCOME		$ 25,000.00

110

6. **(28 Points)** The BLT Company has been operating for the past 15 years. Shown below is selected information from the last two years of operations.

	As of 12/31/93	As of 12/31/92
Accounts Receivable (Gross)	$3,000	$2,500
Less: Allowance for Uncollectible (Doubtful) Accounts	(325)	(300)
Accounts Receivable (net)	$2,675	$2,200

Additional information: Sales during 1993 were $25,000 and were all on credit.

Required: Using the information above, answer the following questions. Show computations in the space provided. All information is as of 12/31/93 unless otherwise stated.

A. **(4 Points)** The BLT Co. shows $325 in its Allowance for Uncollectible Accounts as of 12/31/93. What does this mean?

B. **(4 Points)** Compute the Accounts Receivable turnover for 1993.

C. **(4 Points)** BLT's sales terms are 1/10 N/60. Given your answer in b. above, explain to the manager what it tells you about the effectiveness of BLT's sales terms. (NOTE: If you were unable to compute a turnover in b. above, use a turnover of 10 times per year to answer this question.)

(Question 6 Continued)

BLT's inventory records for 1993 are shown below. BLT uses the First In, First Out (FIFO) method of inventory. During the year, there were 2,500 units sold at a selling price of $10 per unit.

	Quantity	Cost Per Unit
Beginning Inventory	1,000 units	$5
First Purchase	2,000 units	$6
Second Purchase	1,500 units	$7

D. **(4 Points)** Compute the dollar amount for Ending Inventory.

E **(4 Points)** Compute the dollar amount of cost-of-goods sold.

F. **(4 Points)** Assuming a period of rising prices, would the cost of goods sold be higher or lower if LIFO were used to cost inventory? Why?

G. **(4 Points)** Assume BLT has failed to recognize a significant inventory obsolescence problem that exists in its ending inventory at 12/31/93. What impact would such inventory obsolescence have on its reported gross margin, net income, total assets and owner's equity in 1993? Explain.

7. **(30 points)** On December 31, 1994, Simplicity Software Systems leased an office building and the land it sits on from Executive Leasing Corporation. Simplicity signed a 20-year noncancelable lease requiring monthly lease payments at the end of each month (beginning January 31, 1995) of $11,011. The fair values of the building and land at the lease date were $800,000 and $200,000, respectively, resulting in an implicit interest rate of 12% **per annum**. The lease agreement transfers title to Simplicity with the final lease payment to be made on December 31, 2014.

   A. **(6 points)** Jim Gardner, one of Simplicity's managers, said, "We really made a bad deal here. This property's only worth $1,000,000, but we will be paying principal and interest totalling $2,642,640 over the life of the lease." Show with supporting calculations how Gardner arrived at this amount.

   B. **(6 points)** "You Harvard grads are all dunces," replied Sally Sharpwit. "I learned how to analyze these situations in my Accounting 15 class at CSU, Chico." Provide a brief explanation of why Gardner's analysis is not correct.

   C. (Points as indicated) The building's estimated life is 30 years. The salvage value for the building (not considering the land) is $80,000. Complete the following information for the January 31, 1995 balance sheet for the leased property. **Show all supporting calculations.**

		POINTS
Leased land	$_____	(2)
Leased building	$_____	(2)
Less: Accumulated depreciation	-_____	(6)
Leased building (net)	$_____	(2)
Lease liability (do not break into current & noncurrent)	$_____	(6)

EXAM # _____

NAME _____

SS # _____

SECTION # _____

CALIFORNIA STATE UNIVERSITY, CHICO

ACCOUNTING 16

INTRODUCTORY ACCOUNTING - II

SPRING, 1995

FINAL EXAM

110 MINUTES

200 POINTS

INSTRUCTIONS: Count the pages of this exam (14 pages). Transfer the EXAM # shown at the top of this page to all successive pages. Show all computations on the examination pages. **Correct numerical answers that are not supported by computations will receive no credit.**

Summary of Grading:

Question #1	(26)	_____
Question #2	(25)	_____
Question #3	(20)	_____
Question #4	(20)	_____
Question #5	(20)	_____
Question #6	(20)	_____
Question #7	(37)	_____
Question #8	(12)	_____
Question #9	(20)	_____
Total Points	(200)	_____

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1. **(26 Points)** Match each of the definitions A-M with a corresponding term, 1-19 below. Put the number of the term representing the best match in the blank space next to the definition. A particular term should not be matched with more than one definition.

___A. A method that allocates manufacturing overhead to products on the basis of activities consumed in making those products.

___B. The key things an organization must do to successfully carry out its strategy.

___C. A schedule detailing variances between budgeted and actual results.

___D. Measures of performance for an entire company, such as return on equity and market share.

___E. Transactions and events whereby resources are obtained from, or repaid to, owners and creditors.

___F. A budget that includes both financial and nonfinancial measures.

___G. A budget prepared before the period begins that is not used for performance evaluation.

___H. The use of information developed by using multiple cost drivers to identify operational problems and to improve process effectiveness.

___I. Structure that encourages individual parts of an organization to work toward common goals.

___J. A JIT production scheduling concept whereby products are not produced until ordered.

___K. The process of restating a subsidiary's financial statements from its functional currency to the reporting currency.

___L. The value of one currency in terms of another.

___M. Standards set in attempting to match the performance of the best firms in the world in achieving a specific task.

1. Activity-Based Costing
2. Activity-Based Management
3. Benchmark Standards
4. Comprehensive Budget
5. Consolidation
6. Critical Success Factors
7. Cross-Exchange Rate
8. Demand Pull
9. Exchange Rate
10. Financing Activities
11. Investing Activities
12. Management Control System
13. Participative Budgeting
14. Performance Budget
15. Process Outcome Measures
16. Static Budget
17. System Outcome Measures
18. Translation
19. Total Quality Management

2. Pricing (25 Points)

A. **(12 Points)** Many business firms use a "cost-plus" pricing formula as the first step in setting final selling prices for their products. Several bases for the "cost" portion of the formula have been considered in this course. Demonstrate your understanding of cost bases by completing the table below (i.e., insert the appropriate costs and calculate the correct total for each cost base).

	Variable Direct Materials	Variable Direct Labor	Variable Mfg. Overhead	Fixed Mfg. Overhead	Variable Selling & Administrative	Fixed Selling & Administrative	Total Cost
Total Costs Assuming Production and Sales Equal 10,000 Units	$400,000	$600,000	$500,000	$900,000	$300,000	$800,000	$3,500,000
Possible Cost Bases							
Variable Mfg. Costs (Solution Example)	$400,000	$600,000	$500,000	-0-	-0-	-0-	$1,500,000
Total Manufacturing Costs							
Variable Costs							
Total Costs							

B. **(6 Points)** Using the cost base "Variable Mfg. Costs" given above, calculate the appropriate markup percentage that would yield a unit selling price of $675 per unit.

C. **(7 Points)** Assume that (1) the budgeted selling price is determined by marking up the "Variable Mfg. Costs" by 250%, and (2) that anticipated sales will equal anticipated production of 10,000 units, calculate anticipated net income. Use data from part A as needed.

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3. **Financial Statement Analysis (20 Points)**

Presented on the next page are the December 31, 1993 and 1994 balance sheets and the income statement for the year ended December 31, 1994 for Aragon, Inc.

Required:

A. **(6 Points)** Compute the following for Aragon (show all computations):

1. The 1994 Operating Performance ratio

2. The 1994 Inventory Turnover ratio

B. **(4 Points)** Did Aragon pay a dividend in 1994? Explain why or why not.

C. **(5 Points)** Did Aragon have a translation gain or loss in 1994? Explain your answer.

D. **(5 Points)** Discuss the factors a banker would weigh in determining if Aragon should be given a loan. Be specific!

Aragon, Inc.
Comparative Balance Sheets
December 31, 1994 and 1993

	1994	1993
Assets		
Current Assets		
Cash	$46,000	$52,000
Accounts receivable	31,000	24,000
Inventory	204,000	162,000
Prepaid items	2,000	2,500
Total Current Assets	$283,000	$240,500
Plant and Equipment		
Service equipment	190,000	190,000
Retail building	400,000	400,000
Display and fixtures	198,000	198,000
	$788,000	$788,000
Less: Accum. Depreciation	-230,000	-160,000
Net Plant and Eq.	$558,000	$628,000
Goodwill	125,000	125,000
Total Assets	$966,000	$993,500
Liabilities		
Current Liabilities		
Accounts payable	$20,000	$18,000
Wages payable	3,000	2,500
Total Curent Liabilities	$23,000	$20,500
Notes payable	0	0
Mortage payable	272,000	272,000
Total Liabilities	$295,000	$292,500
Stockholders' Equity		
Common stock	$150,000	$150,000
Retained earnings	346,000	292,900
Foreign Currency Translation Adj.	175,000	258,100
Total Stockholders' Equity	$671,000	$701,000
Total Liabilities and Stockholders' Equity	$966,000	$993,500

Aragon, Inc
Income Statement
Year Ending December 31, 1994

Sales Revenue	**$1,025,000**
Cost of Goods Sold	**535,500**
Gross Margin	**$489,500**
Selling & Administrative Expenses	**401,000**
Income Before Taxes	**$88,500**
Income Tax	**35,400**
Net Income	**$53,100**

4. **(20 Points)** NUMMI (New United Motor Manufacturing, Inc.) is investigating the pros and cons of changing its supplier of the small batteries for its small electric vehicle. It has received bids from manufacturers in Australia and Britain. The bids for the batteries are:

Australia	400 Australian Dollars
Britain	190 British Pounds

A recent edition of ***The Wall Street Journal*** reports the following exchange rates:

	Foreign Currency Units per Dollar
Britain	.6257 British Pounds
Australia	1.3509 Australian Dollars

A. **(5 Points)** From the above information, which supplier is offering the lower dollar cost?

B. **(5 Points)** Assuming NUMMI's foreign supplier of the batteries bills in its local currency, what risks does NUMMI face in this transaction?

C. **(10 Points)** German Distribution Company is proposing to import 2,000 of NUMMI's small electric vehicles for distribution in Europe. NUMMI's expected selling price is $12,000 per vehicle sold in the United States. The German company is offering the following prices for the next three years payable in **German Marks**.

Year #1	16,800 German Marks
Year #2	17,400 German Marks
Year #3	18,400 German Marks

NUMMI's management estimates that the Mark per dollar exchange rate will be 1.4, 1.5, and 1.6 for years 1, 2, and 3, respectively. Comment on the advisability of NUMMI entering into an agreement with the German firm given the proposed price terms and expected exchange rates.

5. **(20 points)** The Barkley Company manufactures and sells sports equipment. The equipment is manufactured in a JIT work cell. The work cell can produce up to 9,000 units per month using existing labor and equipment. Results for the month of November, 1994 are presented in the table:

   A. **(7 Points)** Compute and record in the table below the missing planning and performance budget amounts for total November work cell labor cost.

   B. **(4 Points)** Compute and record in the table below the variance for each item above and circle U or F to indicate whether the variance is unfavorable or favorable. Show calculations to the right of the variance column.

COMPUTATIONS:

Item	Static or Planning Budget	Flexible or Performance Budget	Actual Results	Variance	
Units	8,000	_____	8,500	xxxxxxxxxxxx	
Work Cell Material Costs	$50,000	$_____	$54,000	$_____ F or U	
Work Cell Labor Costs	$42,000	$_____	$41,000	$_____ F or U	
Work Cell Labor Hours	2,400 hours	$_____	2,247 hours	_____ F or U	
Number of Late Deliveries	480 (6%)	_____	314	_____ F or U	
Throughput Time	.3 day	_____	.4 day	_____ F or U	
Work Cell Gross Margin	$68,000	$_____	$72,000	$ 2,375 U	
WIP Inventory	30 units	30 units	22 units	_____ F or U	

REQUIRED:

   C. **(9 Points)** Based on the individual variances in the table above, evaluate the overall (that is, "big picture") November performance for the work cell. Do not merely report each variance, but discuss what the overall evaluation is. Be sure to include both positive and negative performance aspects.

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6. **(20 Points)** WRL Fountain Pens Company uses TQM, JIT, and ABC techniques to manufacture and sell fountain pens. The company produces three different models of fountain pens (Summit, Acme, and Pinnacle). The Acme model is manufactured in a dedicated work cell established exclusively for the production of this type of pen. A review of the May 1995 cost accounting data for the Acme production work cell revealed the following:

1.	Units of production	12,000
2.	Acme work cell labor costs (fixed)	$18,000
3.	Variable material costs	$36,000
4.	Other direct work cell costs (fixed)	$48,000
5.	Beginning work-in-process units (50% complete)	10
6.	Ending work-in-process units (50% complete)	10
7.	Beginning finished-goods inventory units	2
8.	Ending finished-goods inventory units	2
9.	Units sold	12,000

In addition to the direct costs indicated above, WRL Fountain Pens Company incurred indirect company-wide manufacturing costs. These costs have been separated into two overhead cost pools (for allocation to all three products) as follows:

Cost Pool	Yearly Costs	Cost Driver	Total Expected Driver Activity
General Factory Overhead	$420,000	Manufacturing Space Required (square feet)	70,000 sq. ft.
Maintenance	$240,000	Machine Hours	80,000 Mhr.

During 1995, the Acme model occupied 10,000 square feet of manufacturing floor space and used 8,000 machine hours. The May 1995 production and sales of Acme represented 15% of the annual estimated activity.

Required:

A. **(10 Points)** Determine the direct costs per unit of producing an Acme fountain pen during the month of May 1995.

B. **(10 Points)** Determine the indirect costs per unit of producing an Acme fountain pen during the month of May 1995.

7. (37 Points) The Balance Sheet for Ronsport, Inc., a manufacturer of camping stoves, for the year 1995 is presented below:

RONSPORT, INC.
Balance Sheet
For The Year Ended December 31, 1995
(000's omitted)

Assets		
Cash		$ 800
Accounts Receivable		1,200
Inventory		900
Fixed Assets (Cost)	$8,000	
Less: Accumulated depreciation	3,000	5,000
Total Assets		$7,900
Liabilities & Owners' Equity		
Total Liabilities		$1,000
Owners' Equity:		
Contributed Capital	$4,500	
Retained Earnings	2,400	6,900
Total Liabilities & Owners' Equity		$7,900

Ronsport expects the following activities to take place during 1996 (000's omitted):

a. Sell $12,000 of backpacks (all sales are credit sales).
b. Incur total manufacturing costs of $5,800 (including $800 of depreciation expense).
c. Incur selling and administrative expenses (all cash) of $3,500.
d. Ronsport expects to purchase land for $900 as a future site for expanded manufacturing operations. The land will be paid for in cash in December 1996.
e. At the end of 1996, accounts receivable are expected to be 30% of 1996 sales.
f. Inventories are expected to be $900 at the end of 1996.
g. Liabilities at the end of 1996 are expected to be $1,000.
h. Income taxes are 30% of income before tax, all paid during 1996.

REQUIRED:

Complete the following budgeted financial statements for 1996 using the format provided. To receive full credit, you must show all calculations or data sources in the right hand margins next to each financial statement.

7. (Continued)

A. **(7 Points) Budgeted Income Statement:**

RONSPORT, INC.
Budgeted Income Statement
For The Year Ending December 31, 1996

		Points	Show all calculations or give data source for each line indicated
Sales	$	(2)	
Manufacturing Expense (COGS)	$5,800		Item b. on page 10
Gross Margin	$	(1)	
Selling & Administrative expenses	$		
Income before taxes	$2,700		
Income taxes	$	(3)	
Net income	$	(1)	

B. **(10 Points) Budgeted Cash Flow Statement**

RONSPORT, INC.
Budgeted Statement of Cash Flows
For The Year Ending December 31, 1996

Cash Flow from Operating Activities			
Net Income	$	(3)	
1. (Describe):	$	(3)	
2. (Describe):	$	(3)	
Net cash provided (used) from operations	$		
Cash Outflow from Investing Activities			
Purchase of land	$	(1)	
Net increase <decrease> in cash	$<610>		

125

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7. (Continued)

C. **(14 Points) Budgeted Balance Sheet:**

RONSPORT, INC. Budgeted Balance Sheet For The Year Ending December 31, 1996			Points	Show all calculations or give data source for each line indicated
Assets				
Cash		$	(3)	
Accounts receivable		$	(2)	
Inventory		$900		
Fixed Assets (Cost)	$		(2)	
Less: Accum. Depre.	$		(3)	
Net Fixed Assets		$		
Total Assets		$9,790		
Liabilities and Owners' Equity				
Liabilities		$1,000		
Owners' Equity				
Contributed capital		$4,500		
Retained earnings		$	(3)	
Total Liabilities and Owners' Equity		$	(1)	

D. From the information given and from your answers on the previous page, determine the following:

1. **(6 Points)** Explain why Ronsport, Inc. expects to earn a positive net income for 1996 but expects to show a net decrease in cash for 1996.

8. **Cost Management at CCC (12 Points)**

Throughout the CCC case, management used accounting information to diagnose problems and to help improve operations.

REQUIRED:

A. **(6 Points)** In Module 2, CCC determined product costs using a traditional cost system in which overhead was allocated based on direct labor hours. In Module 3, CCC used activity-based costing (ABC). Explain what additional insights for product costing CCC gained by using ABC instead of a traditional cost system

B. **(6 Points)** Later, in Module 3, CCC adopted TQM and JIT philosophies. Discuss the changes CCC made in its accounting and management control systems to accommodate these changes in operating philosophy

9. **(20 Points)** In Module 3 of this course you learned about Total Quality Management (TQM). In your Student Course Outline, TQM was defined as a management philosophy emphasizing four principal elements. These elements consistently result in the delivery of products and services in a manner that improves a company's chance of succeeding in today's competitive business environment. Answer the following items as they relate to TQM.

   REQUIRED:

   A. **(10 Points)** Identify and briefly describe three principal elements of TQM.

      1. _____

      _____

      2. _____

      _____

      3. _____

      _____

   B. **(10 Points)** Assuming that CCC is still using the "traditional" view or paradigm, explain how one of the TQM elements you identified above might be used to enhance CCC's operations and make the Company more competitive. Be specific.

EXIT INTERVIEW
ACCOUNTING 015
SPRING 1995

Student name:_____ SS#_____

Interviewer:_____

INSTRUCTIONS TO INTERVIEWER

Read the introduction and each numbered question below to the student and record his/her responses in the spaces provided. Note that items in BOLD should not be read to the student. The BOLD items represent instructions to the interviewer to do something, e.g., "hand seven cards to interviewee," or to code a student response, e.g., __major help, __somewhat helpful, etc.

Introduction:

All of the data collected in this interview will be placed in a sealed envelope and delivered to researchers not involved in accounting instruction. The data will be held in strict confidence by the researchers and will not be provided to accounting instructors or others, except in summary fashion.

The accounting faculty considers you "the student" to be its most important "customer." Accordingly, the faculty wants and needs your input regarding the effectiveness of the introductory accounting course ACCT 015 so that the course may continually be improved.

The following questions will explore your perceptions of the effectiveness of various aspects of ACCT 015.

1 - Active learning:

This course continually placed you in the "active learning mode" in which you frequently were asked to perform tasks described on the following six cards. Hand six cards to interviewee.

Please examine these cards carefully. Allow time for the interviewee to review each card.

I want you to place each card on top of one of the designated boxes on the following sheet. Place "active learning" sheet in front of interviewee and allow time for sorting of cards and placement on sheet.

Starting with the cards placed on the "positive" feelings box, what reason(s) can you give for your positive feelings about the first card? Pick up first card, code with a "+" (positve response), write reason(s) on the back, replace card, select next

card, etc.

Turning next to the cards placed on the"negative" feelings box, what reason(s) can you give for your "negative" feelings about the first card? Pick up first card, code with a "-" (negative response), write reason(s) on the back, replace card, select next card, etc.

Finally, turning to the cards placed on the "neutral" feelings box, do you have any comments, favorable or unfavorable about these items? Pick up first card, code with a "0" (neutral response), write comments on the back, replace card, select next card, etc.

The "active learning" mode frequently required you to search through information contained in Handouts, the SLA text, and the Student Course Outline in order to formulate solutions to assigned problems. This process is often referred to as "discovery learning."

Did you find that this "discovery learning" process helped or hindered your progress in mastering the course materials? Why?

Code the interviewee's response:

major	somewhat	somewhat	major
__ help	__helpful	__hindered	__hinderance

Record reasons:___ _____
_____ _____
_____
__
_____ _____
_

2 - Group work:

A considerable amount of time in this course was devoted to small group assignments.

Did you participate in one, two, or three or more groups during the semester?

Code interviewee's response:

__One group
__Two groups
__Three or more groups

The following questions deal only with your experience in your first group.

With respect to your <u>first</u> group, did your group members learn from each other? Why or why not?

Code the interviewee's response:

__A lot __ occasionally __ seldom __ not at all

Record reasons: _____
_____
_____
_____

Did members of your <u>first</u> group work effectively together in forming group consensus? Why or why not?

Code the interviewee's response:

__generally __ occasionally __seldom __not at all

In those cases where consensus was not achieved in your <u>first</u> group, what factors seemed to prevent reaching a consensus?

Code the interviewee's response(s):

__Personality conflicts

__Lack of advance preparation

__Unwillingness to compromise

__Assignments not clear as to what consensus was sought

__Lack of interest in group activities

__Laziness of certain group members

__Other:_____
_____

<u>3 - Instructional techniques:</u>

This course introduced several instructional techniques that are described on the following six cards. Hand six cards to interviewee.

Please examine these cards carefully. Allow time for the interviewee to review each card.

I want you to place each card on top of one of the designated boxes on the following sheet. Place "instructional techniques" sheet in front of interviewee and allow time for sorting

of cards and placement on sheet.

Starting with the cards placed on the "positive" feelings box, what reason(s) can you give for your positive feelings about the first card? Pick up first card, code with a "+", write reason(s) on the back, replace card, select next card, etc.

Turning next to the cards placed on the"negative" feelings box, what reason(s) can you give for your "negative" feelings about the first card? Pick up first card, code with a "-", write reason(s) on the back, replace card, select next card, etc.

Finally, turning to the cards placed on the "neutral" feelings box, do you have any comments, favorable or unfavorable about these items? Pick up first card, code with a "0", write comments on the back, replace card, select next card, etc.

4 - Instructional materials:

This course used various types of instructional materials that are described on the following seven cards. Hand seven cards to interviewee.

Please examine these cards carefully. Allow time for the interviewee to review each card.

I want you to place each card on top of one of the designated boxes on the following sheet. Place "instructional materials" sheet in front of interviewee and allow time for sorting of cards and placement on sheet.

Starting with the cards placed on the "positive" feelings box, what reason(s) can you give for your positive feelings about the first card? Pick up first card, code with a "+", write reason(s) on the back, replace card, select next card, etc.

Turning next to the cards placed on the"negative" feelings box, what reason(s) can you give for your "negative" feelings about the first card? Pick up first card, code with a "-", write reason(s) on the back, replace card, select next card, etc.

Finally, turning to the cards placed on the "neutral" feelings box, do you have any comments, favorable or unfavorable about these items? Pick up first card, code with a "0", write comments on the back, replace card, select next card, etc.

5 - Mentor tasks:

This course used mentors who performed several tasks that are described on the following four cards. Hand four cards to interviewee.

Please examine these cards carefully. Allow time for the interviewee to review each card.

I want you to place each card on top of one of the designated boxes on the following sheet. Place "mentor tasks" sheet in front of interviewee and allow time for sorting of cards and placement on sheet.

Starting with the cards placed on the "positive" feelings box, what reason(s) can you give for your positive feelings about the first card? Pick up first card, code with a "+", write reason(s) on the back, replace card, select next card, etc.

Turning next to the cards placed on the"negative" feelings box, what reason(s) can you give for your "negative" feelings about the first card? Pick up first card, code with a "-", write reason(s) on the back, replace card, select next card, etc.

Finally, turning to the cards placed on the "neutral" feelings box, do you have any comments, favorable or unfavorable about these items? Pick up first card, code with a "0", write comments on the back, replace card, select next card, etc.

That completes our list of questions. Do you have any final comments about Accounting 015 that you would like the faculty to consider in their ongoing efforts to improve this course?

Record other matters:_____
_____
_____
_____
_____

****

Thanks very much for participating in this interview. Place this interview sheet in the envelope and seal it in front of the interviewee. Write your name across the seal. Deliver the sealed envelope to the Accounting Department Office (Geri Drivon). Thank you.

Active Learning (AL)

Positive feelings regarding the importance of these items in learning the materials

Neutral feelings regarding the importance of these items in learning the materials

Negative feelings regarding the importance of these items in learning the materials

AL complete written assignments before coming to each class session

AL respond frequently to questions asked by the instructor regarding assignments

AL work in small groups on assignments in class

AL make oral presentations

AL work in small groups on assignments outside of class

AL take short quizzes on materials to be discussed in class that day

Instructional Techniques (IT)

Positive feelings regarding the importance of these items in learning the materials

Neutral feelings regarding the importance of these items in learning the materials

Negative feelings regarding the importance of these items in learning the materials

IT Use of a progressive case, "John the Painter," which involved a related set of decision problems faced by the company

IT Use of a personal computer for writing assignments and spreadsheet analyses

IT Use of unstructured problems (e.g., Jake's Lumber) that required you to develop "defensible" solutions rather than to determine "right" answers

IT Use of mentors

IT

Use of analysis and essay questions instead of multiple choice questions on exams

IT

Use of "hands on" computer proficiency tests to demonstrate competence in the use of spreadsheets

EXIT QUESTIONNAIRE
ACCOUNTING 015
SPRING 1995

Introduction

The accounting faculty considers you "the student" to be its most important "customer." Accordingly, the faculty wants and needs your input regarding the effectiveness of the introductory accounting course (ACCT 015) so that the course may continually be improved.

Students wishing to earn 5 bonus points in ACCT 015 may provide responses to the questions listed below. These questions were asked of a random sample of students in exit interviews. Record your responses on the separate "MULTI-PURPOSE ANSWER SHEET," starting on SIDE 1, answer #1. (Do not fill in the left side of SIDE 1, i.e., name, sex, birth date, etc.).

Please turn in this questionnaire and answer sheet to your instructor at the final exam. Your responses will be placed in an envelope to be sealed and delivered to researchers not involved in accounting instruction. The data will be held in strict confidence by the researchers and will not be provided to accounting instructors or others, except in summary fashion.

The following questions will explore your perceptions of the effectiveness of various aspects of ACCT 015.

Active learning:

This course continually placed you in the "active learning mode" in which you were frequently asked to perform the tasks described below. Please indicate for each item whether you had very negative, negative, neutral, positive, or very positive feelings regarding the importance of the item in learning the course materials.

	Very Negative		Neutral		Very Positive
1.Complete written assignments before coming to each class session.	1	2	3	4	5
2.Respond frequently to questions asked by the instructor regarding assignments.	1	2	3	4	5
3. Work in small groups on assignments in class.	1	2	3	4	5

	Very Negative		Neutral		Very Positive
4. Work in small groups on assignments <u>outside of</u> class.	1	2	3	4	5
5. Take short quizzes on materials to be discussed in class that day.	1	2	3	4	5
6. Make oral presentations.	1	2	3	4	5

The "active learning" mode frequently required you to search through information contained in Handouts, the SLA text, and the Student Course Outline in order to formulate solutions to assigned problems. This process is often referred to as "discovery learning."

	Greatly Hindered		Neutral		Greatly Helped
7. Did you find that this "discovery learning" process hindered or helped your progress in mastering the course materials?	1	2	3	4	5

<u>Group work</u>:

A considerable amount of time in this course was devoted to small group assignments.

8. Did you participate in one, two, or three or more groups during the semester?
   1. One group
   2. Two groups
   3. Three or more groups

The following questions deal only with your experience in your first group.

	Not At All	Seldom	Occasionally	A Lot
9.With respect to your first group, did your group members learn from each other?	1	2	3	4
10. Did members of your first group work effectively together in forming group consensus?	1	2	3	4

11. In those cases where consensus was not achieved in your first group, what single factor listed below seemed to be most important in preventing the group from reaching a consensus (select only one factor)?

1. Personality conflicts
2. Lack of advance preparation
3. Unwillingness to compromise
4. Assignments not clear as to what consensus was sought
5. Lack of interest in group activities
6. Laziness of certain group members

Instructional techniques:

This course introduced several instructional techniques that are described below. Please indicate for each item whether you had very negative, negative, neutral, positive, or very positive feelings regarding the importance of the item in learning the course materials.

	Very Negative		Neutral		Very Positive
12. Use of a progressive case, "John the Painter," which involved a related set of decision problems faced by the company.	1	2	3	4	5
13. Use of a personal computer for writing assignments and spreadsheet analyses.	1	2	3	4	5
14. Use of unstructured problems (e.g., Jake's Lumber) that required you to develop "defensible" solutions rather than to determine "right" answers.	1	2	3	4	5
15. Use of mentors.	1	2	3	4	5
16. Use of "hands on" computer proficiency tests to demonstrate competence in the use of spreadsheets.	1	2	3	4	5
17. Use of analysis and essay questions instead of multiple choice questions on exams.	1	2	3	4	5

Instructional materials:

This course used various types of instructional materials that are described below. Please indicate for each item whether you had very negative, negative, neutral, positive, or very positive feelings regarding the importance of the item in learning the course materials.

	Very Negative		Neutral		Very Positive
18. Course textbook (SLA)	1	2	3	4	5
19. Overhead transparencies	1	2	3	4	5
20. Student Course Outline	1	2	3	4	5
21. Handout Assignments	1	2	3	4	5
22. Group Assignments	1	2	3	4	5
23. Midterm exam	1	2	3	4	5
24. Individual/group quizzes	1	2	3	4	5

Mentor tasks:

This course used mentors who performed several tasks that are described below. Please indicate for each task whether you had very negative, negative, neutral, positive, or very positive feelings regarding the importance of the mentor's task in learning the course materials.

	Very Negative		Neutral		Very Positive
25. Provided spreadsheet training	1	2	3	4	5
26. Consulted with groups during in-class group assignments	1	2	3	4	5
27. Met with students at scheduled office hours (mentor lab)	1	2	3	4	5
28. Provided responses over the phone to student inquiries	1	2	3	4	5

****

This completes our list of questions. Thanks very much for participating in this survey. Turn in this questionnaire and answer sheet to your instructor at your final exam. Remove this page, fill in the information below,and hand it in separately to your instructor so that he can give you credit for completing this survey.

Name: Instructor: Section:

Completion of exit questionnaire earns five bonus points.

A Statement of Course Objectives and Subobjectives

By

Curtis L. DeBerg & Richard B. Lea

Co-Directors of the Department of Education's FIPSE Grant

BEST COPY AVAILABLE

A Statement of Course Objectives and Subobjectives

By

Curtis L. DeBerg

and

Richard B. Lea

Co-Directors

of the

Department of Education FIPSE Grant

October 31, 1992

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Re-Engineering Elementary Accounting Education is a continuing publication of CSU Chico's FIPSE Project.
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I. INTRODUCTION

The Department of Accounting and Management Information Systems (AMIS) recently received approval of its proposal entitled, "Re-Engineering Elementary Accounting (February 1992)," which was submitted to the Department of Education 's "Fund for Improvement of Postsecondary Education (FIPSE)."[1] Our contractual agreement with FIPSE identifies five major goals to be achieved.

I.1 FIPSE Project Goals

For the three-year funding period (September 1992 - August 1995), the project goals are as follows:

1. Identify a set of overall objectives and subobjectives for the elementary accounting course (two-semester sequence);
2. Design outcome assessment instruments to determine if objectives and subobjectives are being met;
3. Develop materials to meet the objectives and subobjectives (e.g., technological resources, cases, group activities);
4. Revise and refine our means of delivering the materials using CSU, Chico's outstanding technological resources;
5. Disseminate the results to other California State universities and California community colleges.

I.2 Completion of Goal #1

This paper presents a set of overall objectives and subobjectives for a two-semester course in elementary accounting.

This paper presents a set of overall objectives and subobjectives for a two-semester course in elementary accounting. These objectives and subobjectives, which have received a careful review by the accounting faculty, provide the foundation and framework for achieving the other four project goals.

The remainder of this paper is organized as follows. Section II presents the set of overall objectives and explains the rationale for those objectives. This section also demonstrates that the objectives are consistent with recent recommendations made by the Accounting Education Change Commission (AECC) and by the college's Undergradu-

[1] Appendix 1 contains an executive summary of the FIPSE proposal. Copies of the complete proposal are available for review in the AMIS Department office.

ate Curriculum Committee (UCC). Section III presents a related set of subobjectives and topics for each overall objective. Finally, Section IV briefly describes a "process-oriented" approach to be pursued in striving for continuous improvement in elementary accounting in the future.

In pursuing remaining goals of the FIPSE grant, the accounting faculty should keep in mind that a significant faculty developmental effort will take place preceeding the formal introduction of new materials and teaching methods. Specifically, the FIPSE contract calls for a series of faculty seminars and workshops that will deal with integrating cases across the two course sequence, developing student writing skills, scripting and producing videotapes, administering group projects, interdisciplinary updates, test preparation and grading, and other instructional matters. Representatives from Writing Across the Disciplines (WAD) have already been contacted and are planning workshops for late in the Fall Semester, 1992 and for the January Intersession,1993 that will assist faculty in introducing new materials in the Spring Semester, 1993. Additionally, our plan is to have all faculty who use the new materials in AC 15 next Spring to meet weekly to discuss progress.

II. Overall Objectives For Elementary Accounting

Traditionally, elementary accounting has been viewed as the first course for accounting majors. This view, which has been held nationwide, has resulted in considerable emphasis being placed on the preparation of accounting information and on the application of accounting rules and procedures. Yet, most students who enroll in elementary accounting will not become accounting majors. Nor will they become heavily involved in the preparation of accounting information.

II.1 CSUC's Student Population

Presently, the population of students enrolled in elementary accounting at CSUC breaks down approximately as follows:

Accounting majors	10%
Business, nonaccounting majors	55%
Other majors (non business)	35%

It is clear that most students enrolled in elementary accounting at CSUC represent users rather than preparers of accounting information.

In light of this breakdown, it is clear that most students enrolled in elementary accounting at CSUC represent users rather than preparers of accounting information. Accordingly, the major thrust of our re-engineering effort is to redirect emphasis towards "users" and to assist students in understanding the uses and limitations of accounting information in a variety of economic decision-making contexts.

II.2 The Needs of Users of Accounting Information

Adults in today's society inevitably become members of many different organizations, including businesses, governmental units, social clubs, charities, etc. All such organizations share a common problem: limited resources are available for pursuing organizational goals. Consequently, adults are continually confronted with the need to make important economic decisions. Accounting information will generally be a vital input to those decisions. Hence, adults need to know how to effectively use accounting information in making economic decisions. In short, adults in today's society need to become "accounting literate."

The elementary accounting course will be re-engineered to assist "users" in becoming "accounting literate." The course will focus on economic decision-making and will confront students with a variety of decision problems that they personally must solve. The

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TABLE 1
Overall Objectives for Elementary Accounting (Two-Semester Course)

I. Knowledge Acquisition

A. **Economic Decision-Making** - Introduce students to a broad range of decision-making problems that arise in various organizational settings and to approaches for dealing with such problems, including their ethical considerations.

B. **Accounting Literacy** - Introduce students to the role of accounting in a global market economy and to fundamental accounting concepts that underly the development and communication of information that supports economic decision-making.

C. **Business/Organization Literacy** - Assist students in gaining a basic understanding of the business/organizational contexts in which economic decision-making takes place.

II. Skill Development

A. **Problem Solving** - Assist students in enhancing their analytical/problem solving skills by engaging them in a variety of real world, unstructured problems that require problem definition and clarification, data collection, interpretation, analysis, and defense of proposed solutions.

B. **Interpersonal** - Assist students in improving their abilities to communicate and to work together with other adults by engaging them in frequent writing exercises, oral presentations, and group activities.

C. **Computer** - Assist students in becoming more adept in the use of computers by engaging them in frequent computer applications in business, accounting, and economic decision-making activities.

economic decison will be used, both to motivate students, and to introduce relevant accounting, business, and organization concepts.

II.3 The Accounting Student's Motivation to Learn

Motivation to learn will be enhanced by actively engaging students in a continuous sequence of economic decisions. Each decision problem will require students to learn something new about accounting, business, and organizations in order to solve the problem. The student's "need to know" will become the motivation to acquire additional knowledge. And, the "decision" will be the central organizing principle around which accounting, business, and organization concepts are introduced.

III.4 Knowledge Acquisition Objectives

In line with the above ideas, the two-semester course in elementary accounting will be designed to achieve three "Knowledge Acquisition" objectives, which are set forth in the top half of Table 1. The three knowledge objectives reflect the following course theme:

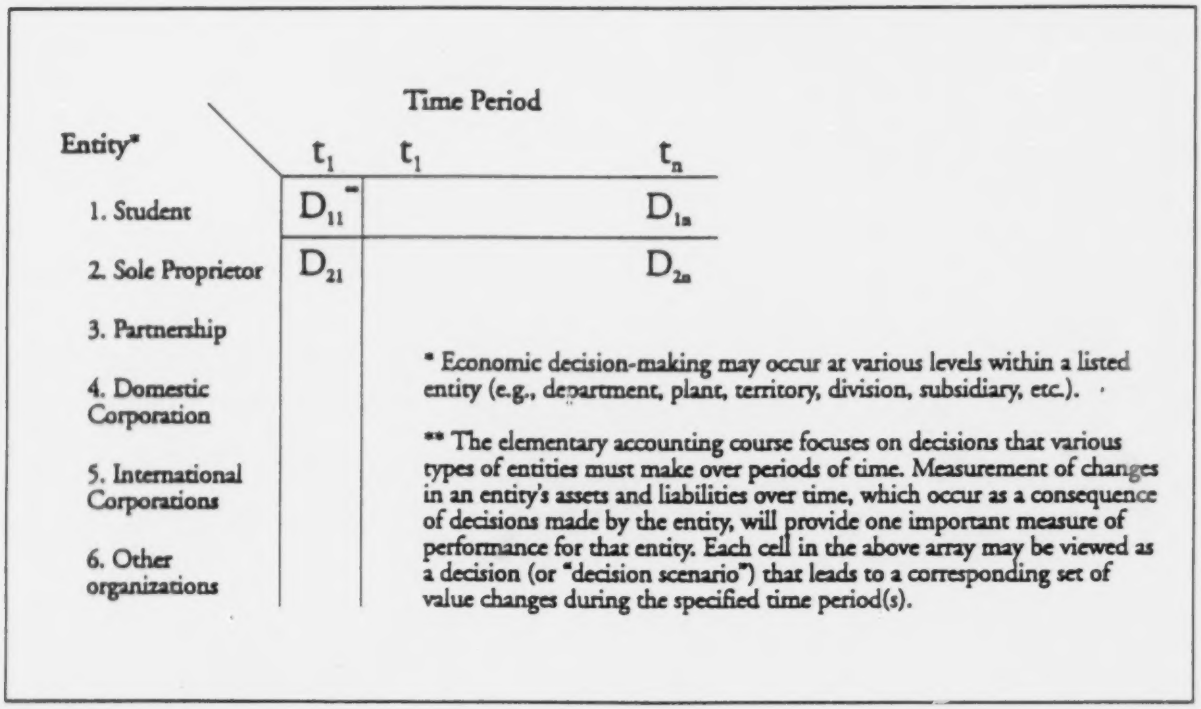
> Elementary accounting should provide students with an understanding of uses and limitations of accounting information in economic decision-making in a variety of business and organizational contexts.

This theme gives explicit recognition to the natural linkages that exist among economic decision-making, accounting knowledge, and business and organizational knowledge. For example, consider the sequence of decisions involved in starting a business and running it for one year, which is illustrated in Table 2. Students will be asked to address such a decision sequence early in the course. A business would be selected that would be familiar to all students (e.g., a pizza parlor, bicycle shop, summer house painting, etc.). The decision sequence begins with the initial decision (whether to "go") and proceeds to other problems that would typically be faced during startup and first-year operations. Table 2 identifies relevant accounting and business concepts that must be understood in order to successfully deal with each decision problem. Decisions provide the context and motivation for learning about accounting and business. As the course proceeds, decisions and decision contexts will become increasingly complex, involving partnerships, domestic corporations (including consolidated enterprises), international enterprises and other types of organizations. Moreover, as indicated in Table 1, economic

TABLE 2
Linkages Between Economic Decision-Making, Accounting Concepts and the Business/Organization "Context"

	Decision Problem*	Related Accounting Concepts	The Business/Organization Context
1	Should I start a business? ·Kind of business? ·Initial financing? ·Measures of success?	·Role of accounting information in economic decisions ·Entity concept ·Assets, liabilities, owner's equity ·Cost, opportunity cost ·Measurement of business success: ·Profit = Revenue less Expenses ·Business plans, budgets: ·Revenue/expense forecasting ·Cash flow ·Financial position	·Entrepreneurship ·Business purpose, value creation ·Business risk ·Business success: ·Profitability ·Rate of return ·Business planning ·Employer vs. employee roles ·Competition, market, customer ·Finance function: ·Sources of financing: ·Creditors ·Owners ·Time value of money
2	How will I promote my business and attract customers?	·Marketing costs ·Accounts recievable, bad debts ·The role of "costs" in pricing	·Marketing function ·Product/service attributes of price, quality, etc. ·Credit ·Total quality management
3	What facilities, equipment, employees and other assets will I need to get started?	·Capital budgeting ·Current assets, working capital ·Long lived assets, depreciation ·Employee wages, benefits, and payroll taxes	·The management function ·Human resource management
4	Having been in business for one year, how am I doing?	·Accounting transactions ·Periodicity ·Valuation concepts ·Performance measures: ·Financial ·Nonfinancial ·Financial reporting: ·Objectives ·Qualitative characteristics	·Evaluation of a business enterprise
5	What should I try to accomplish next year?	·Financial planning, operating budgets ·Fixed vs. variable costs	·Management planning/control

*The listed sequence of decisions illustrates the notion of a "decision scenario" that students will be asked to address early in the course in conjunction with starting their own small business.


Time Period
Entity*
t_1
t_1
t_n
1. Student
D_{11}**
D_{1n}
2. Sole Proprietor
D_{21}
D_{2n}
3. Partnership
4. Domestic Corporation
5. International Corporations
6. Other organizations
* Economic decision-making may occur at various levels within a listed entity (e.g., department, plant, territory, division, subsidiary, etc.).
** The elementary accounting course focuses on decisions that various types of entities must make over periods of time. Measurement of changes in an entity's assets and liabilities over time, which occur as a consequence of decisions made by the entity, will provide one important measure of performance for that entity. Each cell in the above array may be viewed as a decision (or "decision scenario") that leads to a corresponding set of value changes during the specified time period(s).

Above: Figure 1. *Economic decision-making through time and across entities.*

decision-making will eventually be viewed broadly to include ethical considerations, which will receive signficant emphasis in the course.[2]

II.5 Decision Scenarios

The entire array of decision problems that will be addressed in the two-semester course will involve "decision scenarios" that will vary along two major dimensions - type of entity and time period.

The entire array of decision problems that will be addressed in the two-semester course will involve "decision scenarios" that will vary along two major dimensions - type of entity and time period. As shown in Figure 1, students will be exposed to various types of entities that will become increasingly complex as the course proceeds. Also, within a particular entity context, students will be confronted with a time-sequenced set of decisions that will require accounting measurements and valuations at different points in time.

The knowledge acquisition objectives view economic decisions as the central organizing principle for knowledge acquisition. As shown in Figure 2, each major "decision scenario"that will be considered during the year will require students to: i) gain an understanding of certain additional accounting and business/organization concepts that are relevant to the decision at hand; ii) continually use and build upon previously acquired accounting and business knowledge in addressing the current decision problem.

[2] The movement from simple to complex cases is intended to be reflective of Bloom's taxonomy: knowledge → comprehension → application, etc.

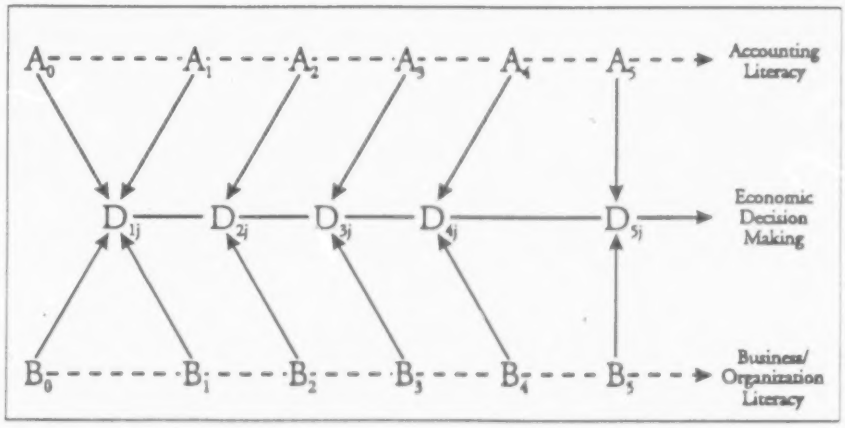
II.6 Objectives Regarding Skill Development

To become effective economic decision makers in today's society, adults not only need to meet the three "knowledge acquisition" objectives presented above, but also must develop skills in three key areas related to decision-making: i) unstructured problem-solving skills; ii) interpersonal skills; and iii) computer skills. As indicated in the lower half of Table 1, the elementary accounting course will also be designed to satisfy skill development objectives in these three areas.

The relevance of these skills to decision-making is clear and immediate. First, the possession of creative problem-solving skills is obviously desirable. In real-life settings, economic decision problems neither present themselves in nicely structured, clearly defined terms; nor do they typically lead to well-defined solutions with a single, correct answer. Instead, real problems are ill-structured and "messy." Solutions often involve several defensible positions. Students need to recognize these complexities and gain practice in dealing with them.

Below: Figure 2. *Economic decision-making: the central organizing principle for knowledge acquisition.*

Secondly, most (if not all) significant economic decision-making activities involve



Legend

D_i = the ith decision in a sequence of economic decisions related to the jth entity
A_0 = background accounting knowledge
A_i = additional accounting knowledge needed to address the ith decision
B_0 = background business/organization knowledge
B_i = additional business/organization knowledge to address the ith decision

In real settings, problems are often addressed by teams rather than individuals. Problem analyses generally have to be communicated to others, both orally and in writing.

interpersonal relationships. In real settings, problems are often addressed by teams rather than individuals. Problem analyses generally have to be communicated to others, both orally and in writing. Proposed courses of action may need to be vigorously defended in open debate or in position papers. Thus, it is clear that such interpersonal skills play a critical role in economic decision-making and should be addressed in the elementary accounting course.

Finally, it should also be clear that computers, particularly personal computers, will play an ever-increasing role in economic decision-making activities. Accordingly, students in elementary accounting should be assisted in enhancing their skills in using a computer for this purpose.

II.7 Consistency of Objectives with Recommendations of the AECC and UCC

The six overall objectives for elementary accounting (see Table 1) are consistent with recent recommendations of both the AECC and the UCC, as shown by the comparisons presented in Table 3.

As Table 3 indicates, The AECC has recently proposed that the first course in accounting should meet the following primary objective (see Appendix 2):

> "to learn about accounting as an information development and communication function that supports economic decision-making....[T]he course should help students perform financial analysis; derive information for personal or organizational decisions; and understand business, governmental, and other organizational entities (p.2)."

The three knowledge objectives shown in Table 1 are clearly in line with the ideas contained in this statement.

The three knowledge objectives for elementary accounting are also consistent with the recommendations of the UCC. In its interim report (June 1992), the UCC calls for core courses involving (among others): i) an introduction to business decision-making (3 credits); ii) introductory accounting (3 credits). Although the UCC did not elaborate on the content of either of these two courses, the direction implied by its course titles would appear to be in agreement with our knowledge objectives.

TABLE 3
Proposed Objectives vs. Recommendations of the AECC and UCC

Proposed Objectives	*AECC Recommendations	**UCC Recommendations
Economic Decision Making	Focus on relevance of accounting information for decision-making (p. 3)	Need a course re: Introduction to Business Decision Making (p. 8)
Accounting Literacy	Learn about accounting as an information and communication function that supports economic decision making (p. 2)	Need a course in Accounting (p. 9)
Business/organization literacy	Understanding business, governmental, and other organizations (p. 3)	Need a course that introduces students to the various subject areas of business (p. 8)
Skill Development:		
·Problem Solving	After completing the course, students should possess enhanced analytical skills and the ability to confront unstructured problems (p. 3)	Learning should emphasize hands-on experience and relate to solving real-world problems (p. 5) Problem solving skills: to reason logically and ethically, to prioritize, to cope with change, etc. (p. 7)
·Interpersonal	Priority should be placed on students interacting with students (p. 4)	Students should regularly take part in group projects. People skills: listening, negotiating, teamwork, leadership, oral and written communication (p. 7)
·Computer	Students should develop the ability to locate, obtain, and organize information from both human and electronic sources***	Computer skills should be integrated throughout the curriculum (p. 6)

*See Appendix 2
**UCC, "Undergraduate Curriculum Committee Draft Report," June, 1992.
***AECC, "Objectives of Education for Accountants," 1990 (See Appendix B).

II.8 Integration of Knowledge

Notice that the three knowledge objectives reflect the view that elementary accounting should present an "integrated package" of concepts involving economic decision-making, accounting, business, and organizations.[3] Further, the objectives (and related subobjectives - see below) assume that students will have had no previous exposure to the separate components of this "integrated package." Although each component might be taught in a separate introductory course (as suggested by the UCC), we believe that significant advantages result from their integration in one (two-semester) course.

Accounting has long been recognized as the "language of business," which suggests that introductions to business concepts and to accounting concepts ought to occur together, rather than in separate courses.

First, accounting has long been recognized as the "language of business," which suggests that introductions to business concepts and to accounting concepts ought to occur together, rather than in separate courses. Second, since accounting is a support function for economic decision-making, accounting concepts are best understood in the context of those decisions. Finally, as indicated earlier, in our experience students become highly motivated to learn about accounting and business when they become personally involved in decisions that require such knowledge.

II.9 Skill Development

As Table 3 indicates, both the AECC and UCC explicitly recommend that elementary accounting place greater emphasis on development of skills in the three areas covered by the three "skill development" objectives shown in Table 1. Thus, the AECC urges that, after completing elementary accounting, students should:

> "possess enhanced analytical skills and the ability to confront unstructured problems — that is, problems with more than one defensible solution (p. 3)."

Additionally, the AECC recommends that the first course should:

> "put a priority on [teachers'] interaction with students and on interaction among students. Students' envolvement should be promoted by methods such as cases, simulations, and group projects (p.4)."

The UCC also explicitly recognizes the need for skill development efforts in the above

[3]The UCC explicitly recognizes the need for integration in recommending the following: "Learning should be integrative. . . Students should start with a 'language of business' overview course (p. 5)."

three areas. Specifically, the UCC report identifies the following general goals (among others) to be pursued in all courses within the business undergraduate curriculum:

> "-Learning should emphasize hands-on experience and relate to solving real-world problems...;
>
> -Students should regularly take part in group projects since groups are an essential part of organizational reality...;
>
> -Computer skills should be integrated throughout the curriculum so that students are computer literate when they graduate (pp. 5-6)."

Additionally, the UCC points out the need for skills in oral and written communication (p.7).

In sum, the three objectives regarding skill development reflect generally agreed-upon capabilities that are desired of students who complete elementary accounting.

III. Subobjectives And Topics For Elementary Accounting

Table 4 presents subobjectives and related topics for each of the six overall objectives for elementary accounting (see Table 1). Topic listings are intended to be suggestive rather than exhaustive and are included simply to provide elaboration on a subobjective. Also, as detailed curriculum matters are addressed under Goal #3 of the FIPSE grant, many of the details set forth in the table will inevitably require modification. Thus, Table 4 should be viewed as a "strategic plan" for curriculum development and not a detailed "blueprint." (See further discussion of Goal #3, below).

Several ideas reflected in Table 4 deserve emphasis. First, the central organizing principle for the elementary accounting course is economic decision making. Section I.A. of Table 4 lists a variety of decision problems that will be the focus of the course. A major task involved in the pursuit of Goal #3 will be to create decision scenarios that contain these types of decision problems.

The intent will be to minimize the amount of rule-based and procedural-oriented instructional materials that is commonly found in introductory texts in financial and managerial accounting.

Second, in meeting the subobjectives for accounting, the intent will be to minimize the amount of rule-based and procedural-oriented instructional materials that is commonly found in introductory texts in financial and managerial accounting. In short, the accounting concepts and procedures that will be covered in elementary accounting will be screened for decision relevancy.

Third, in meeting subobjectives related to business/organization literacy, the intent is to flesh out or enrich the "environment" in which a decision problem takes place. Accordingly, the elementary accounting course will minimize the amount of purely descriptive instructional materials that is commonly found in traditional "introduction to business" textbooks. Instead, the two-semester course will focus on those business/organization concepts that also pass a test of "decision relevancy." Coverage of other descriptive materials will be deferred to later business courses.

Finally, the subobjectives described in Table 4 represent desired outcomes for the entire, two-semester course, without regard to sequencing of instructional materials and related detailed curriculum issues will be addressed under Goal #3.

III.1 Pursuit of Goal #3

Pursuit of Goal #3 will involve the following major tasks:

1. Deciding on specific "decision scenarios" and the sequencing of those scenarios. These sequenced scenarios will become the central organizing principle for all instructional materials.
2. Identifying essential decision-making concepts that are involved in each scenario,

including ethical dimensions of those decisions.

3. Identifying decision relevant accounting, business, and organizational concepts and topics that are needed to address specific decision scenarios.
4. Deciding on appropriate teaching/learning approaches to be used for each decision scenario.
5. Selecting appropriate mechanisms for integrating instructional materials across two semesters (e.g., use of sequenced cases and/or business simulations that begin in semester #1 and continue into semester #2).
6. Preparing detailed instructional materials for instructor and students that reflect the results of 1-5, above.

In summary, the subobjectives and topics shown in Table 4 represent the starting point for pursuit of Goal #3. The table reflects the overall scope and direction of the elementary accounting course and should be viewed as the framework in which the tasks involved in Goal #3 will be pursued.

TABLE 4
OBJECTIVES, SUBOBJECTIVES, AND TOPICS FOR ELEMENTARY ACCOUNTING

I. KNOWLEDGE ACQUISITION

I.A. ECONOMIC DECISION-MAKING:
INTRODUCE STUDENTS TO A BROAD RANGE OF DECISION-MAKING PROBLEMS THAT ARISE IN VARIOUS ORGANIZATIONAL SETTINGS AND TO APPROACHES FOR DEALING WITH SUCH PROBLEMS, INCLUDING THEIR ETHICAL CONSIDERATIONS.

I.A.1. Decision-making framework:

a) **Nature of Economic Decisions** - Understand the meaning of decision-making, role of decision-making in business and other organizational settings, major elements of decision problems, and role of accounting and other information in making economic decisions.

Topics: Contexts in which business decision problems arise (see I.C., below), problem recognition, objectives, alternative actions, outcomes/consequences, uncertainty, role of information in reducing uncertainty

b) **Ethical Considerations** - Understand the nature of ethical decisions and how to make value-based judgments in a variety of economic decision-making contexts.

Topics: Ethical dilemmas, stakeholders, ethical models for moral reasoning

c) **Utilization of Scarce Resources** - Understand the nature and role of scarce resources in economic decisions and the notion of "cost" as a sacrifice of resources to gain an objective.

Topics: See various cost definitions included in I.B.2., below

I.A.2. Specific decision problems:

a) **Decision to Start a Small Business**-Understand the basic marketing, finance, and management considerations that come into play when deciding to start your own business and the role of accounting and other information in that decision (see I.B.2.a and I.C.3., below).

Topics: Issues involved in deciding upon a specific market (see I.C.5., below), initial sources of financing (see I.A.2.e. and I.C.7., below), initial work force (see I.C.6., below) and initial mix of assets (see I.A.2.d,. below).

b) **Short Run (Day-to-Day) Decisions** - Understand various processes by which managers make a variety of short run decisions, focusing primarily on costs and benefits that are relevant to those decisions (see I.B.2.b., below).

Topics: Major features of add (expand) or drop, special order, make or buy, cost-volume-profit, and other prototypical short-run decision problems; unused capacity, resource constraints, quantitative vs. qualitative factors that influence decisions (also see I.B. and I.C., below)

Table 4 (continued)

c) Pricing Decisions - Understand the major features of selected pricing decisions and the role of accounting information in setting prices (see I.B.2.c and I.C.5., below).

Topics: Economic model for setting prices, cost-plus pricing formulas, time and materials pricing, competitive bidding, distress pricing.

d) Capital Investment Decisions - Understand the major elements of capital investment decision problems and the role of accounting and other information in such decisions (see I.b.2.d. and I.c.7., below).

Topics: Cost of capital, target rate of return, net present value

e) The Investor's Decision Problem - Understand the major elements of the investor's decision to supply funds to business entities and the role of accounting and other information in the investment process (see I.B.2.e. and I.C.7., below).

Topics: Investment risk, yield, liquidity, diversification

f) Decisions Involving Control of Day-to-Day Operations - Understand major issues and decisions faced by managers in controlling day-to-day operations in a variety of organizational contexts, with an emphasis on production operations, and the role of accounting and other information in controlling operations (see I.B.2.f. and I.C.8., below)

Topics: Management by exception, standards (benchmarks) for controlling day-to-day operations, financial vs. nonfinancial measures for controlling operations

g) The Performance Evaluation Problem . Understand major issues and decisions involved in evaluating the performance of individuals and economic entitities (and subentities) in a variety of organizational contexts and the role of accounting information in performance evaluation (see I.B.2.g.below).

Topics: Responsibility centers, standards (benchmarks) for evaluating performance, goal congruence, incentives, and other behavioral considerations, financial vs. nonfinancial measures of performance.

Table 4 (continued)

I.B. ACCOUNTING LITERACY:

INTRODUCE STUDENTS TO THE ROLE OF ACCOUNTING IN A GLOBAL MARKET ECONOMY AND TO FUNDAMENTAL ACCOUNTING CONCEPTS THAT UNDERLY THE DEVELOPMENT AND COMMUNICATION OF INFORMATION THAT SUPPORTS ECONOMIC DECISION-MAKING.

I.B.1. The Accounting Framework - Basic Concepts:*

a) **Role of Accounting** - Understand the role of the accounting profession in today's global economy.

Topics: Overview of the accounting profession, information risk, audit function and reports, professional ethics, AICPA, FASB, IMA, IIA, FEI, IFAC, IASC

b) **Basic Concepts of Accounting** Understand the basic concepts underlying accounting information.

Topics: Entity, money as the common denominator, transactions, cost, assets, liabilities, owners' equity, financial position, periodicity, revenue, expenses, income, cash flow

c) **Accounting Measurement** - Understand basic accounting recognition and measurement principles.

Topics: Qualitative characteristics of accounting information, revenue recognition, expense/loss recognition, product vs. period costs

d) **Accounting Information Systems** - Understand the major features (e.g., inputs, processing , and outputs-with an emphasis on outputs) of selected prototypical accounting systems that are designed to routinely develop and communicate financial information for external and/or internal uses.

Topics: Responsibility accounting, operational budgeting, job costing, activity costing, quality cost measurement, cost management systems

e) **Cost vs. Benefit of Information** - Understand the benefits and costs associated with obtaining additional information for decision-making purposes.

Topics: see I.A.1.a, above

f) **Historical Perspective** - Understand the evolutionary development of accounting vis a vis business and other organizations.

Topics: Barter exchanges, money-based transactions, accounting for partnership trading ventures, creation of double-entry bookkeeping, accounting for the corporate form of business, income taxation, formation of the SEC, accounting for global enterprises, evolution of accounting standard setting bodies (also see I.C.1., below)

*Since these concepts underly accounting information generally, they are not explicitly linked to a particular decision problem. However, the basic goal of the course is to introduce these concepts to students in selected decision contexts where the need for the concept flows naturally from the problem to be solved.

Table 4 (continued)

I.B.2. Accounting Information Relevant to Specific Decision Problems (also see I.B.1, above):

a) Accounting Information Relevant to the Decision to Start a Small Business - Understand the role of accounting information in starting a small business (see I.A.2.a., above)

Topics: Opportunity cost, imputed value, predicted vs. actual revenues (and expenses, assets, etc.), cost behavior (fixed vs. variable costs), business taxes (employee payroll, property, income, etc.)

b) Accounting Information Relevant for Short Run Decisons - Understand the notion of "differential" costs and benefits in a variety of short run decision contexts (see I.A.2.b., above).

Topics: Various cost definitions (e.g., fixed vs. variable costs, opportunity costs, sunk costs, future costs. etc,), cost behavior, cost drivers

c) Accounting Information Relevant for Pricing Decisons - Understand how cost information enters into a variety of pricing decisions (see I.A.2.c., above).

Topics: "Full" vs. "variable" total product cost (i.e., mfg., selling, admin.), "full" vs. "variable" mfg. product cost (i.e., direct materials, direct labor, and mfg. overhead)

d) Accounting Information Relevant for Capital Investment Decisions - Understand the role of estimated future cash flows in capital investment decisions (see I.A.2.d., above).

Topics: Cash flow analysis (projections), cash flow vs. cost amortization, before vs. after tax cash flows, depreciation tax shields, accounting vs. internal rate of return

e) Accounting Information Relevant for the Investor's Decision Problem - Understand the roles of enterprise income and cash flow in an investment decision (see I.A.2.e., above).

Topics: Historical vs. future enterprise cash flows, linkage of enterprise cash flows to investor cash flows

f) Accounting Information Relevant for Controlling Day-to-Day Operations - Understand the role of accounting information in day-to-day control of operations (see I.A.2.f., above).

Topics: Controllable costs and revenues, standards (quantity, price), financial vs. nonfinancial measures of operating activities

g) Accounting Information Relevant for Evaluating performance (e.g., monthly, yearly, and long term) - Understand the role of accounting information in evaluating the performance of individuals and economic entities and subentities (see I.A.2.g., above).

Topics: Financial vs. nonfinancial performance standards (benchmarks), cost and revenue variances, flexible budgets, activity costing, value-added vs. nonvalue added costs, quality costs, budgetary slack, strategic cost management

Table 4 (continued)

I.C. BUSINESS/ORGANIZATION LITERACY:

ASSIST STUDENTS IN GAINING A BASIC UNDERSTANDING OF THE BUSINESS/ORGANIZATIONAL CONTEXTS IN WHICH ECONOMIC DECISION-MAKING TAKES PLACE.

I.C.1. **Historical Perspective** - Understand the evolutionary development of business and other selected organizations (also see I.B.1.f., above).

Topics: Early agrarian economies, industrial revolution, 20th century global economy, information age

I.C.2. **Current Environment** - Understand the technological, economic, social, legal and regulatory forces that are present in today's global market economy.

Topics: Trends in technology, GNP, disposable income, inflation, interest rates, population shifts, energy conservation, environmental concerns, litigious environment, role of SEC and other regulatory agencies, tax policy, TQM

I.C.3. **Business Formation** - Understand the various forms of business ownership, activities involved in starting a small business, and reasons for converting from one form of business to another.

Topics: Business purpose, value creation, profit, pros and cons of proprietorship, partnership, and corporation, entrepreneurship, business risk and return, initial business plan, why small businesses fail

I.C.4. **Management** - Understand the nature and role of the management process in selected organizations.

Topics: Goals and objectives, planning (strategic and operations), types of organizational designs/ structures, directing (leadership, motivation etc.), and control (standards, monitoring, etc.), starting and managing a small business

I.C.5. **Marketing** - Understand the nature and role of the marketing function and how the marketing process is managed in selected organizations.

Topics: Markets, product selection/development, pricing, distribution, promotion, marketing involved in starting a small business

I.C.6. **Human Resource Management** - Understand the nature and role of the human resource management function and how human resources are managed in selected organizations.

Topics: Recruitment, motivation, training, evaluation, compensation, hiring employees in starting a small business

I.C.7. **Finance** - Understand the nature and role of the finance function in selected organizations.

Topics: Securities markets, commercial bank lending, sources of funding for starting a small business, uses of funds in a small business, time value of money

I.C.8. **Production Operations Management** - Understand the nature and role of the production operations function and how production activities are managed in selected organizations.

Topics: Planning products, processes, and facilities, planning production to meet demand, control of production operations

Table 4 (continued)

II. Skill Development

II.A. Problem Solving:

Assist students in enhancing their analytical/problem solving skills by engaging them in a variety of real world, unstructured problems that require problem definition and clarification, data collection, interpretation, analysis, and defense of proposed solutions.

II.A.1. **Complex Cases** - Enhance skills in analysing unstructured problems in real world settings (also see Out-of-Class Group Cases, below).

II.A.2. **Business Simulation** - Enhance skills in developing and integrating a set of decisions involving multiple business functions (also see Team Competition, below).

II.A.3. **Essay Exam Questions** - Improve skills in analysing complex problems in examination settings (also see Interpersonal, below).

II.B. Interpersonal:

Assist students in improving their abilities to communicate and to work together with other adults by engaging them in frequent writing exercises, oral presentations, and group activities.

II.B.1. **In-Class Group Exercises**- Improve skills in working with others in achieving specified objectives.

II.B.2. **Team Competition in Business Simulation** - Enhance skills in making group decisions (also see Business Simulation, above)

II.B.3. **Out-of-Class Group Cases** - Improve skills in working with others in analysing complex cases and in presenting findings orally and in writing.

II.B.4. **Term Papers** - Improve skills involved in presenting a comprehesive set of ideas related to a technical subject in a well-organized, clearly-written exposition.

(Note: group exercises will be designed to emphasize a student's individual accountability for contributing to the group and for understanding the content of group exercises.)

II.C. Computer:

Assist students in becoming more adept in the use of computers by engaging them in frequent computer applications in business, accounting, and economic decision-making activities.

1. **Data Analysis** - Become familiar with a limited selection of software that may be used in analysing financial data (e.g., regression and/or graphical analysis of cost behavior).

2. **Spread Sheet Analysis** - Become familiar with a spreadsheet application involving financial information (e.g., preparation of an operating budget for a small business).

3. **Simulation** - see Business Simulation, and Team Competition in Business Simulation, above.

IV. ACHIEVING CONTINUOUS IMPROVEMENT IN ELEMENTARY ACCOUNTING

The FIPSE contract provides the accounting faculty with a unique opportunity to make significant improvements in elementary accounting. The achievement of "desired improvements," however, should not be viewed as an "outcome" to be achieved by the end of the grant that consists of a bound package of new instructional materials. Clearly, numerous aspects of such a package will quickly become obsolete (probably in its second printing!).

Our goal should be to put into place a process for orderly improvement in elementary accounting.

Instead of trying to achieve a one-time outcome, our goal should be to put into place a process for orderly improvement in elementary accounting that contains the following elements:

1. **Assessment of Strengths and Weaknesses** - Leaders in accounting education and practice have already performed this assessment, which created the impetus for the FIPSE grant.

2. **Identification of Desired Objectives** - This paper provides an agreed upon statement of desired objectives and subobjectives that are not only grounded in the views and recommendations of leaders of the accounting profession, but also consistent with views of COB's undergraduate curriculum committee.

3. **Establishment of Standards for Comparison** - At the end of the Fall Semester, 1992, before any significant curriculum changes are introduced, the performance of students enrolled in elementary accounting will be measured against "desired" objectives and subobjectives (see **FIPSE Project Goals, #2**, above).[4]

4. **Initial Process Improvements** - An initial set of instructional materials will be designed to meet the agreed upon objectives and subobjectives (i.e., **Goal #3**). Those materials will be used in class, and students (treatment group) will be examined against the "desired objectives." The treatment group will then be compared to the "standards for comparison" for assessment of improvements.[5]

5. **Ongoing Process Improvements** - The initial set of instructional materials will be modified in light of test results determined in #4, above, and the cycle will then be

[4] On the first day of class this fall semester (1992), each student enrolled in AC 15 and 16 completed an "attitudes and perceptions" survey, which will provide additional "standards for comparison."

[5] An initial set of new instructional materials is tentatively planned for completion and introduction for AC 15 in the Spring Semester, 1993 and for AC16 in the Fall Semester, 1993.

repeated. Improvement over time will be measured by the trend in treatment group performance.

In summary, the above process-oriented improvement approach is driven by the agreed-upon set of objectives and subobjectives, which play a pivotal role in the instructional improvement process.

Appendix 1

California State University, Chico
Re-Engineering Elementary Accounting

FIPSE Proposal—Executive Summary

The Department of Accounting and Management Information Systems (AMIS) faculty at California State University, Chico, proposes to re-engineer its two elementary undergraduate accounting courses: introductory financial accounting and introductory managerial accounting. Our goal is to (1) introduce students to *decision-making* processes involving financial data, (2) bring about *accounting literacy*, and (3) develop students' *problem solving* skills. The new courses will focus on developing student knowledge, skills, and values which form the foundation for a lifetime of professional success. Our strategy will be to move away from the traditional rule-based, procedure-oriented mode to a more dynamic, interactive learning mode. The new mode views the student as an active information processor who uses data, exercises judgments, evaluates risk, and solves real-world problems.

Significance. Leaders in accounting education and practice have joined together in voicing a strong desire for changing the present quality of accounting education in the United States. CSU, Chico acknowledges the important role of these leaders in stimulating thinking about the accounting curriculum as a whole, yet deliberately chooses to focus on the "other" student, not solely on accounting majors. The pervasive nature of financial information and decision-making in modern society requires that non business students acquire *accounting literacy*. Without literacy one cannot communicate effectively; without accounting literacy one is greatly impaired from making reasoned decisions.

Goals. The overall goals of the redesign of elementary accounting are to:

- identify a new set of overall objectives and detailed sub-objectives for the two courses;
- develop new materials and revise existing materials to meet these new objectives;
- revise and refine our means of delivering the new materials using CSU, Chico's outstanding technological resources;
- design test instruments to determine if the objectives are being met;
- disseminate the results to the other 19 California State Universities, 107 California community colleges, and other interested universities and colleges nationally.

Feasibility. A high likelihood of success in attaining the goals outlined in this proposal is the result of experience and vision of the project team. The team members' credentials are enobling and their accomplishments empowering. CSU, Chico has the ability to offer moderate size classes which will (a) integrate the elementary courses by developing materials that rely extensively on the interdisciplinary expertise of AMIS

faculty and experts in business ethics and writing skills, (b) develop means of assessing student learning of the overall objectives and detailed sub-objectives described in this proposal (an expert in outcome assessment and measurement is a member of the project team), (c) work with a local community college to reconcile our first year sequence to its first year sequence, and (d) utilize our outstanding instructional development and dissemination capabilities.

Scope. A complete redesign of the first-year accounting courses is proposed. These courses will take on a new focus, emphasizing a user orientation of accounting data for organizational decision making.

Methodological Approach. We will design our new materials to (1) introduce elementary students to available technological resources, (2) integrate case study methods, and (3) emphasize group activities.

Desired Results. Our proposed end-product will be a relevant and stimulating elementary accounting sequence that (a) contains more historical perspective of accounting topics, (b) places a greater emphasis on concepts and theory and less emphasis on technical aspects of current practice, (c) identifies accounting's economic and societal impact, (d) includes more material on political and ethical aspects of decision-making, and (e) assumes a leadership role in establishing a new approach to elementary accounting at peer and community college institutions.

Appropriateness: California State University, Chico's Department of Accounting and Management Information Systems has a committed group of personnel who are willing and able to bring about the changes outlined in this proposal. The University also has outstanding physical facilities to help develop and disseminate the newly designed materials, through this FIPSE Sponsored Grant.

Appendix 2

THE FIRST COURSE IN ACCOUNTING

ACCOUNTING EDUCATION CHANGE COMMISSION POSITION STATEMENT NO. TWO

June 1992

This Statement is issued by the Accounting Education Change Commission (AECC). The AECC was appointed in 1988 by the American Accounting Association and supported by the Sponsors' Education Task Force, representing the largest public accounting firms in the United States. Its Objective is to be a catalyst for improving the academic preparation of accountants so that entrants to the accounting profession possess the skills, knowledge, and attitudes required for success in accounting career paths.

The First Course in Accounting

In its first Position Statement,[1] the Commission outlined the knowledge, skills, and orientation accounting graduates must possess to become successful professionals. This Statement builds upon that foundation by presenting the Commission's views on the first course in accounting.[2]

The concepts in this Statement apply directly to the first course in accounting at the undergraduate level. However, they are also applicable to courses in introductory accounting at the graduate level.

The Importance of the First Course in Accounting

The first course in accounting can significantly benefit those who enter business, government, and other organizations, where decision-makers use accounting information. These individuals will be better prepared for their responsibilities if they understand the role of accounting information in decision-making by managers, investors, government regulators, and others. All organizations have accountability responsibilities to their constituents, and accounting, properly used, is a powerful tool in creating information to improve the decisions that affect those constituents.

[1] Position Statement No. one: objectives of Education for Accountants (September 1990). The view expressed in this Statement should be considered in conjunction with Position Statement No. one.

[2] "First course in accounting" refers to the introductory accounting sequence. usually taught over two terms (e.g. ,introductory "financial" and "managerial" accounting).

The first course has even more significance for those considering a career in accounting and those otherwise open to the option of majoring in accounting. The course shapes their perceptions of (1) the profession, (2) the aptitudes and skills needed for successful careers in accounting, and (3) the nature of career opportunities in accounting. These perceptions affect whether the supply of talent will be sufficient for the profession to thrive. For those who decide to major in accounting or other aspects of business, the course is an important building block for success in future academic work.

Objective of the First Course in Accounting

The primary objective of the first course in accounting is for students to learn about accounting as an information development and communication function that supports economic decision-making. The knowledge and skills provided by the first course in accounting should facilitate subsequent learning even if the student takes no additional academic work in accounting or directly related disciplines. For example, the course should help students perform financial analysis; derive information for personal or organizational decisions; arid understand business, governmental, and other organizational entities.

In achieving this objective, students completing the first course in accounting should--

- Have a broad view of accounting's role in satisfying society's need for information and its function in business, in government, in other organizations, and in public accounting. Students should gain an overview of the accounting profession, encompassing its history, its ethics, its public responsibilities, and its international dimensions as well as an appreciation of the role of auditing in enhancing the credibility of publicly reported information.
- Understand the basic features of accounting and reporting by organizations, including the principles underlying the design, integrity, and effectiveness of accounting information systems.
- Understand fundamental accounting concepts in addition to the elements of financial statements. These concepts include accountability, estimation, accounting judgment (for example, substance vs. form), the qualitative characteristics of accounting information, performance measurement (including productivity and quality), choice in accounting measurement (for example, defining profit centers and other units of accountability), accounting controls and processes, and the ethics of internal and external reporting.

- Appreciate the role of accounting in both the generation of taxes and preparation of economic measurements, by and for governmental bodies.
- Understand that some accounting systems are more effective than others in given circumstances and that the decision-usefulness of information produced by an accounting system depends on its design and choices among information capturing, analysis, and reporting options.
- Possess enhanced analytical skills and the ability to confront unstructured problem that is, problems with more than one defensible solution.
- Gain an appreciation that accounting as a discipline is the focus of constructive debate and intensive rethinking caused by economic and technological change, and one that will continue to evolve in the future.

In general, the first course in accounting should be an *introduction to accounting* rather than *introductory accounting*. It should be a rigorous course focusing on the relevance of accounting information to decision-making (use) as well as its source (preparation).

Teaching Methods

Teachers of the first course in accounting should put a priority on their interaction with students and on interaction among students. Students' involvement should be promoted by methods such as cases, simulations, and group projects. Emphasis should be on teaching the student to learn on his or her own.

Faculty

The commitment of faculty resources[3] to the first course in accounting should be consistent with its foundational importance to the curriculum. The most effective instructors should teach the course. Those who teach the course should have a record of success in teaching, should have up-to-date knowledge of professional developments, should be able to support points by citing relevant research, should be able to bring an

[3]Position Statement No. One: *Objectives of Education for Accountants* (September 1990) p.5, states, "Faculty who are effective teachers and those who develop and implement ne or innovative approaches to teaching and curriculum design should be recognized and rewarded for such scholarly activities." See also Issues Statement No. 1: *AECC Urges Priority for Teaching in Higher Education* (August 1990).

integrative organizational perspective to the course, and should be able to reinforce the relevance of the course to the students by examples from the non-academic work of the accounting profession. These qualifications should be supplemented by enthusiasm and commitments to teaching and the accounting profession.

Conclusion

The first course in accounting is very important to all who take it, whether they plan to become professional accountants or to use accounting information in non-accounting careers. If designed according to this Statement, the course can meet the educational needs of these students, engender accurate perceptions of the broad role of accounting in modern economies, and assist students in making well-informed career choices. The breadth of this influence increases the responsibility of every party capable of improving the effectiveness of the first course in accounting.

Previous Statements Issued by the Accounting Education Change Commission:

Issues Statement No. 1: AECC Urges Priority for Teaching in Higher Education (August 1990).

Position Statement No. One: Objectives of Education for Accountants (September 1990).

Issues Statement No. 2: AECC Urges Decoupling of Academic Studies and Professional Accounting Examination Preparation (July 1991).

Bridging Principles and Intermediate Accounting

Using Electronic Spreadsheets

by

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OVERVIEW

Concern: *Emphasis on AECC-recommended changes in introductory accounting may de-emphasize technical procedures needed for intermediate accounting*

Ways of dealing with the problem:

1. Don't change the introductory courses or the intermediate courses
2. Change the introductory courses, don't change intermediate courses; no "bridge" for transition
3. Change the introductory courses, change the intermediate courses (most AECC-grant schools)
4. Change the introductory courses, offer special "bridge" to largely unchanged intermediate courses
   - Offer special 1-unit credit explicitly for prospective accounting majors (e.g., ASU)
   - Use general ledger software to serve as a bridge, offering the software exercise at the beginning of intermediate accounting
   - Create a special 3-week "transition" module at the beginning of intermediate accounting

Purpose of this paper: To discuss CSU, Chico's Transition Module

Worksheet emphasis is replaced by electronic spreadsheet emphasis

Technology permits a new way of presenting the accounting worksheet

The "12-column, debit/credit, T-account worksheet" is replaced with an "accounting equation spreadsheet" emphasizing the duality feature the accounting identity

Linkages between financial statements are much more apparent using a "data base" approach

- Statement of Cash Flows is prepared by sorting all changes in cash into three categories: O, I, and F
- Income Statement is prepared by sorting all changes in retained earnings by R, G, E, L, D
- Balance Sheet is prepared from the bottom row of the spreadsheet

- Statement of Owner's Equity is merely a summary of changes under capital and retained earnings
- Sensitivity analysis allows students to see how one transaction can affect the financial statements
- Graphical user interface capabilities allow instructors a chance to convey key concpets to students who learn better by a more visual approach
- Graphing and charting capabilities allow users to study the data from different perspectives.

Why use the transition module?

- Many students haven't been exposed to financial accounting in over a year
- Adding a 1-unit course may be difficult, because curricula at many universities takes a long time to change
- Many students are already familiar with spreasheets
- Those who aren't adept at spreadsheets can be "coached" by careful ly assigning students to groups

LEARNING OBJECTIVES

After studying this module, a student should be able to:

1. Understand how financial transactions are recorded using the accounting spreadsheet approach (A = L + E) in CSU, Chico's introductory accounting courses and the debit/credit, T-account approach used at most community colleges and universities.

2. Prepare the three primary, external financial statements, explain each statement's objective, and show how they are linked to one another using both the "electronic spreadsheet" approach and the "12-column worksheet" approach taught at most other universities.

3. Explain why bookkeeping techniques in a manual system, such as closing entries and reversing entries, are unnecessary in a computerized system.

4. Recognize that the accounting system is part of an overall data base management system; special journals and ledgers can be generated by the system to help users make decisions.

5. Understand the linkage between cash flow from operating activities (CFO) and income from operations (IFO). The student should also understand the difference between reporting CFO using both the direct and indirect methods.

6. Prepare a statement of cash flows using both the direct and indirect methods to compute cash flow from operating activites (CFO).

7. Explain the difference between accrual-basis and cash-basis accounting.

To demonstrate comprehension of these learning objectives, students must be proficient at using an electronic spreadsheet. We do not specify which spreadsheet to master (e.g., Excel, Lotus, Works), as long as you are proficient with at least one.

(Note: If you do not have access to a personal computer, you can buy a lab pass for the computer lab in Glenn 304/306. The lab contains several PCs with popular spreadsheet programs connected to high-quality printers.)

In reading this handout and completing the required assignment, it may be helpful to review Chapter 3 of the Principles of Accounting text we are using at CSU, Chico (Accounting Principles and Applications, Fourth Edition, by Skousen, Langenderfer, and Albrecht). If you no longer own the textbook, there are several copies in the Reserve Room on the first floor of Meriam Library (the books are under the name of Professor Curtis L. DeBerg).

In order to complete these exercises, you will need to use Dapple Corporation's 16 journal entries described in Exhibit C-3 on pages C7-C8, and the 9 adjusting journal entries in Exhibit C-6 in Appendix C of your Intermediate Accounting textbook (pp. C-1 to C-36).

Objective 1

Students should understand how financial transactions are recorded using the accounting spreadsheet approach (A = L + E) in CSU, Chico's introductory accounting courses and the debit/credit, T-account approach used at most community colleges and universities.

Discussion of the "Spreadsheet Approach"

In designing a "new" introductory accounting course at CSU, Chico, the CSU faculty chose not to require students to learn the rules of debits and credits. Our rationale was that most students taking the course would not work as accountants and would never prepare financial statements. Our emphasis focused on teaching students how to use financial statements, not how to prepare these statements.

Now that you've enrolled in Intermediate Accounting I (ACC 115), it is important to understand the meaning of debits and credits. Your enrollment in this class means that you are likely planning to major in either accounting or finance. To become truly business literate, we believe it is important that you understand the meaning of debit and credit -- two words unique to the language of accounting.

The key concept underlying these terms in duality. That is, each financial transaction is recorded in a "dual" fashion such that all:

Assets = Liabilities + Owner's Equity

This accounting equation must always be in balance. For example, an increase in an asset account must always be accompanied by either (1) a decrease in another asset, (2) or an increase in either a liability or equity account.

Demonstration of the "Spreadsheet Approach"

Refer to NOWELL1.XLS, the spreadsheet on the next page.

Linda Nowell Law Practice

		Total Assets							Liabilities		Equity		
Date	Description of Transaction	Cash	Office Supplies	Computer	Office Furniture	Auto	Building	Land	Accounts Payable	Notes Payable	Capital	Retained Earnings	Explanation
1-Apr	Opened business bank account	35,000									35,000		
1-Apr	Purchased building and land	(20,000)					130,000	70,000		180,000			
3-Apr	Purchased personal computer	(3,000)		3,000									
8-Apr	Purchased office furniture				11,000				11,000				
12-Apr	Purchased office supplies	(2,800)	2,800										
14-Apr	Returned office furniture				(300)				(300)				
18-Apr	Paid accounts payable	(5,350)							(5,350)				
24-Apr	Inv't in BMV from personal entity					19,000					19,000		
27-Apr	Rendered legal advice	400										400	Revenue
30-Apr	Paid utility bill	(123)										(123)	Expense-Utilities
30-Apr	First mortgage payment	(1,448)								(98)		(1,350)	Expense-Interest
30-Apr	Withdrawal	(2,000)										(2,000)	
30-Apr	Balances (before AJEs)	679	2,800	3,000	10,700	19,000	130,000	70,000	5,350	179,902	54,000	(3,073)	
30-Apr	Total assets	236,179											
30-Apr	Total liabilities and equity	236,179											
	Total liabilities	185,252											
	Total equity	50,927											

If you completed ACC 15 at CSU, Chico, this exhibit should look familiar to you. The exhibit summarizes the first month of activity for Linda Nowell's Law Practice. Notice that account titles serve as column headings, and each row records each transaction based on the accounting equation.

Nowell had 12 transactions during the month of April.

April 1- Opened a business account by depositing $35,000 in cash in the bank.

April 1- Invested in building and land for $130,000 and $70,000, respectively. She made a $20,000 cash down payment, and financed the remaining $180,000 purchase price by issuing a note payable. Terms of the note: 360 months at .75% per month.

April 3- Purchased a personal computer for $3,000 cash. The computer is expected to have a three-year life with no salvage value.

April 8- Purchased $11,000 of office furniture on account. The office furniture is expected to have a five-year life with no salvage value.

April 12- Purchased $2,800 of office supplies with cash.

April 14- Returned $300 worth of office furniture.

April 18- Paid half the outstanding balance in accounts payable.

April 24- Contributed personal BMW automobile to the business. The fair market value of the car is $19,000. The car's expected remaining useful life is six years, with no salvage value.

April 27- Rendered legal advice. Received $400 cash from client.

April 30- Paid $123 utility bill for the month of April.

April 30- Made first monthly payment on the $180,000 Note Payable dated April 1. The total payment was $1,448.

April 30- Withdrew $2,000 in cash for personal use.

Required:

Manually complete the electronic spreadsheet for Dapple Corporation on the next page. The columnar headings have been completed for you, as has the first transaction. Use the 16 transactions for 1995 as described on the following page (these transactions are also described on pages C7-C8). Assume Dapple uses the *periodic method* of accounting for inventory, and that all purchase-related transactions are recorded under retained earnings (e.g., a purchase of merchandise on account is recorded by increasing accounts payable and reducing retained earnings). Also, Dapple uses the net method to account for purchases of merchandise on account.

Dapple Corporation																		
		◀			Total Assets					▶◀				Liabilities	▶	◀	Equity	▶
Date	Description of Transaction	Cash	A/R	N/R	I/R	Invty	Ppd. Ins.	Land	Bldg	Equip	A/P	M/P	S/P	I/P	Income Tax/P	Unearned Rent	Capital Stock	Retained Earnings
1-Jan	Issued 2,000 shares at $10/share	20000															20000	
16-Jan	Purchased land																	
30-Mar	Purchased bldg. and equipment																	
30-Mar	Purchased 1-year ins. policy																	
31-Mar	Purchased mdse. on account																	
3-Apr	Cash sales																	
8-Apr	Paid accounts payable																	
15-Apr	Customer return, defective mdse.																	
20-Apr	Returned mdse. purchased on 4/12																	
15-Jul	Purchased mdse. for cash																	
1-Sep	Sold land for N/R																	
2-Oct	Paid salaries																	
23-Nov	Sales on account																	
12/1/95	Rec'd 3 months rent in advance																	
12/4/95	Cash collected on A/R																	
12/26/95	Purchased mdse. on account																	
12/28/95	Paid misc. operating expenses																	
12/29/95	Paid $500 dividend																	
	Balance (before A.J.E.s)																	

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Transactions for Dapple Corporation

01/01 Various shareholders purchased 2,000 shares of Dapple's no-par stock at $10 per share.

01/16 Dapple purchased 2 acres of land as a building site, paying $1,500 cash per acre.

03/30 Constructed a building at a cost of $15,320, and purchased equipment for $2,120. The total cost was financed by a $10,840 cash down payment and a $6,600 mortgage payable. The mortgage is for two years at an annual interest rate of 12%; all interest and principal is due on March 30, 2997.

03/30 Dapple purchased a 1-year comprehensive insurance policy for $360.

03/31 Dapple purchased $7,400 of mdse. inventory on account from Bark Company; terms- $100 discount/10 days, net/30 days.

04/03 Dapple sold mdse. at a total cash selling price of $8,000.

04/08 Dapple paid $7,300 cash to Bark Company for the invenory purchase on 03/31.

04/15 A customer returned defective mdse. purchased on 04/03 and was given a $250 refund.

04/20 Dapple returned defective mdse. to its supplier, Bark Company, and received a $160 refund.

07/15 Dapple made a $3,100 cash purchase of mdse. inventory and paid an additional $200 freight charge.

09/01 Dapple sold 1 acre of land for $1,320. It accepted a 6-month note receivable. The 6-month interest rate is 7.5%.

10/02 Dapple paid the first 6 months' salaries (April through September) totaling $1,800 to employees.

11/23 Sold mdse. on account for $5,000 to Frank Company and $4,000 to Knox Company. Terms: 2/10, n/60.

12/01 Dapple rented part of its building to Fritz Company, receiving a total of $450 representing 3 months' rent in advance.

12/04 Dapple collected $1,960 cash of accounts receivable from Frank Company (Frank takes a 2% discount on $2,000 of his accounts receivable).

12/26 Dapple purchased $1,900 of mdse. inventory on account from Ajax Company.

12/28 Dapple paid $428 in miscellaneous operating expenses.

12/29 Dapple paid a $500 dividend to its stockholders ($0.25 per share).

Discussion of the "Debit/Credit, T-account Approach"

Refer to the first transaction for Nowell on Page 3, where she contributed $35,000 to start her new business on April 1. In the spreadsheet we added $35,000 under cash and $35,000 under Contributed Capital.

Now let's change the format so that there are two columns under each account instead of one. For example:

Cash

Column 1	Column 2

Contributed Capital

Column 1	Column 2

The "rules" of the game under this format are simple:

> *Increases in asset accounts are listed under Column 1, and decreases in asset accounts are listed under Column 2.*
>
> *Increases in liability/equity accounts are listed under Column 2, and decreases are listed under Column 1.*

It might be helpful to think that the natural "home" of an asset is on the left-hand side of the accounting equation, so it makes sense to record increases on the left. Alternatively, since the natural "home" of liability/equity accounts is on the right-hand side, it makes just as much sense to record increases in these accounts on the right.

To record Linda Nowell's first transaction, we would do the following:

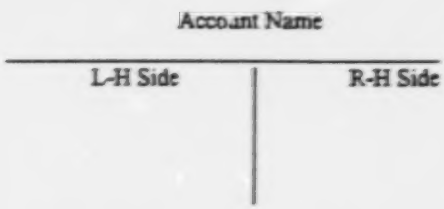
Cash

Column 1	Column 2
+35,000	

Contributed Capital

Column 1	Column 2
	+35,000

Notice that each account is shaped like a T:



Now turn to the spreasheet on the next page. In this spreasheet, all of Linda Nowell's transactions for April are recorded using the "two-column" rule described above.

Nowell Law Practice

ate	Description of Transaction	Cash		Office Supplies		Computer		Office Furniture		Auto		Building		Land	
1-Apr	Opened business bank account	35000													
1-Apr	Purchased building and land		20000									130000		70000	
3-Apr	Purchased personal computer		3000			3000									
8-Apr	Purchased office furniture							11000							
12-Apr	Purchased office supplies		2800	2800											
14-Apr	Returned office furniture								300						
18-Apr	Paid accounts payable		5350												
24-Apr	Inv't in BMV from personal entity									19000					
27 Apr	Rendered legal advice	400													
30-Apr	Paid utility bill		123												
30-Apr	First mortgage payment		1448												
30-Apr	Withdrawal		2000												
30-Apr	Balances (before AJEs)	35400	34721	2800	0	3000	0	11000	300	19000	0	130000	0	70000	
		34721		0		0		300		0		0		0	
		679		2800		3000		10700		19000		130000		70000	

Date	Description of Transaction	Accounts Payable		Notes Payable		Capital		Retained	Earnings						
1-Apr	Opened business bank account						35000								
1-Apr	Purchased building and land				180000										
3-Apr	Purchased personal computer														
8-Apr	Purchased office furniture		11000												
12-Apr	Purchased office supplies														
14-Apr	Returned office furniture	300													
18-Apr	Paid accounts payable	5350													
24-Apr	Inv't in BMV from personal entity						19000								
27-Apr	Rendered legal advice								400						
30-Apr	Paid utility bill							123							
30-Apr	First mortgage payment			98				1350							
30-Apr	Withdrawal							2000							
30-Apr	Balances (before AJEs)	5650	11000	98	180000	0	54000	3473	400						
			5650		98		0		3473		Total assets	236179			
			5350		179902		54000		-3073		Total liab. e	236179			

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For each account, the left-hand column is labeled a debit column, and the right-hand column is labeled a credit column. Take a moment now and label each left-hand column "DR" (for debit) and "CR" (for credit).

Comparing the "accounting spreadsheet" approach to the "debit/credit, T-account" approach, we can see that both spreadsheets contain the exact same information. However, the first spreadsheet doesn't rely on "debit/credit" technique to record transactions.

Using the debit/credit vernacular, we can explain the first transaction by saying that "cash is debited and contributed capital is credited." Using the electronic spreadsheet vernacular, the transaction can be explained by saying "cash increased and contributed capital increased."

That's all there is to the debit/credit game.

To summarize:

Assets		=	Liabilities		+	Equity	
L-H Side = Dr	R-H Side = Cr		L-H Side = Dr	R-H Side = Cr		L-H Side = Dr	R-H Side=Cr
++	–		–	++		–	++

Required:

Complete a spreadsheet for Dapple Corporation (we have completed the columnar headings for you) using the debit/credit technique to record the 16 transactions for 1995 as described on Page 5 (and in pages C7-C8 in the textbook).

Dapple Corporation-- T/account Approach

Date	Description of Transaction	Cash		A/R		N/R		I/R		Invty		Ppd. Ins.		Land		Bldg.	
		Dr	Cr	Dr	Cr	Dr	Cr	Dr	Cr	Dr	Cr	Dr	Cr	Dr	Cr	Dr	Cr
1-Jan	Issued 2,000 shares at $10/share	20000															
16-Jan	Purchased land																
30-Mar	Purchased bldg. and equipment																
30-Mar	Purchased 1-year ins. policy																
12-Apr	Purchased mdse. on account																
3-Apr	Cash sales																
8-Apr	Paid accounts payable																
15-Apr	Customer return, defective mdse.																
20-Apr	Returned mdse. purchased on 4/12																
15-Jul	Purchased mdse. for cash																
1-Sep	Sold land for N/R																
2-Oct	Paid salaries																
23-Nov	Sales on account																
12/1/95	Rec'd 3 months rent in advance																
12/4/95	Cash collected on A/R																
12/26/95	Purchased mdse. on account																
12/28/95	Paid misc. operating expenses																
12/29/95	Paid $500 dividend																
30-Apr	Balances (before AJEs)																

Date	Description of Transaction	A/P		M/P		S/P		I/P		INCOME TAX/P		UNEARNED RENT		CAPITAL STOCK		RETAINED EARNINGS	
		Dr	Cr	Dr	Cr	Dr	Cr	Dr	Cr	Dr	Cr	Dr	Cr	Dr	Cr	Dr	Cr
1-Jan	Issued 2,000 shares at $10/share																
16-Jan	Purchased land														20000		
30-Mar	Purchased bldg. and equipment																
30-Mar	Purchased 1-year ins. policy																
12-Apr	Purchased mdse. on account																
3-Apr	Cash sales																
8-Apr	Paid accounts payable																
15-Apr	Customer return, defective mdse.																
20-Apr	Returned mdse. purchased on 4/12																
15-Jul	Purchased mdse. for cash																
1-Sep	Sold land for N/R																
2-Oct	Paid salaries																
23-Nov	Sales on account																
12/1/95	Rec'd 3 months rent in advance																
12/4/95	Cash collected on A/R																
12/26/95	Purchased mdse. on account																
12/28/95	Paid misc. operating expenses																
12/29/95	Paid $500 dividend																
30-Apr	Balances (before AJEs)																

Comparing the Electronic Spreadsheets to the 12-Column Worksheet

Students who have taken Principles of Financial Accounting at a community college or somewhere other than CSU, Chico are familiar with a term called a "12-column worksheet." The best way to explain the meaning and purpose of the 12-column worksheet is to start by showing you what one looks like. Let's go back to the Linda Nowell example. Above, we saw that, under both the spreadsheet and the T-account approaches, the *unadjusted* account balances were the same amounts.

These unadjusted balances are the starting point for the 12-column worksheet. As you can see below, the first two columns merely reflect the ending balances in the accounts. The only real difference is in *format:* the 12-column worksheet lists the account names vertically, while the approaches described above lists the account names horizontally at the top of the spreadsheets. The only other difference is a minor one. Note in the worksheet below, each fixed asset account, like the Computer, has a contra-asset account listed as a separate account. The accounts are entitled "Accumulated Depreciation." The accounting equation spreadsheet approach can easily accomplish the same thing, by creating "linked data files" that will allow financial statement preparers easy access to the information needed to complete the financial statements.

12-Column Worksheet - Linda Nowell

Linda Nowell Law Practice												
	Unadjusted Trial Balance		Adjustments		Adjusted Trial Balance		Income Statement		Retained Earnings		Balance Sheet	
Account Titles	Dr.	Cr.	Dr.	Cr.	Dr	Cr.	Dr.	Cr.	Dr.	Cr.	Dr.	Cr.
Cash	679											
Office Supplies	2600											
Computer	3000											
Accum. Depn: Comp		0										
Office Furniture	10700											
Accum. Depn: Off. Furn		0										
Auto	19000											
Accum. Depn: Auto		0										
Building	130000											
Accum. Depn: Bldg		0										
Land	70000											
Accounts Payable		5350										
Notes Payable		179902										
Capital		54000										
Retained Earnings,Beg		0										
Revenues		400										
Utilities Expense	125											
Interest Expense	1350											
Withdrawal	2000											
	239852	239852										

Required:

Based on your ending balances (before AJEs) for Dapple Corporation, complete the first two columns of the "12-column worksheet" in a format like the one above. To save you time, the account titles have already been completed for you.

Dapple Corporation: Unadjusted Trial Balance on the 12-Column Worksheet

Account Titles	Unadjusted Trial Balance		Adjustments		Adjusted Trial Balance		Income Statement		Retained Earnings		Balance Sheet	
	Dr.	Cr.	Dr.	Cr.	Dr.	Cr.	Dr.	Cr.	Dr.	Cr.	Dr.	Cr.
Cash												
Accounts receivable												
Notes receivable												
Inventory												
Prepaid insurance												
Land												
Building												
Acc. depreciation:bldg.												
Accounts payable												
Mortgage payable												
Salaries payable												
Interest payable												
Income taxes payable												
Unearned rent												
Capital stock												
Retained earnings												

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Summary: Objective 1

So far, we have learned to make journal entries in an electronic spreadsheet format, using the accounting equation approach and the T-account, debit-credit approach. Then we showed how the ending balances can be transferred to a 12-column worksheet.

Our objective was to show you that there are a number of different ways to arrive at unadjusted account balances. The key is to analyze each transaction correctly. The easy part is to choose a format to report the unadjusted balances. In choosing which format to use, ask yourself which one provides more information (answer: neither- they both provide the same information). Then ask which one is easier to prepare. Most of the accounting faculty at CSU, Chico believe that a one column, plus-minus approach based on the accounting equation is simpler than the debit-credit approach first described by Luca Pacioli in 1494. We believe Pacioli would abandon the debit-credit terminology if he had a personal computer during the Renaissance!